THE BUILDER

VOL. XCVI.—No. 3457. MAY 8, 1909.

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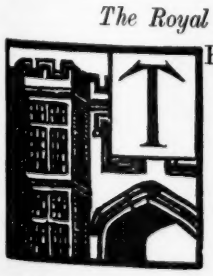
The Royal Academy.



THE hundred and forty-first exhibition of the Royal Academy contains nothing that can be called a great picture (it is but rarely that any modern exhibition does), but it contains an unusually large proportion of fine and interesting work; and in view of the constant practice at present, both in Society and in the Press, of speaking slightingly of the Royal Academy, as a kind of outworn institution, it may be confidently asked, in what other annual exhibition held in London would such a number of good pictures be found collected in one gallery as are now to be seen at Burlington House?

The one work which there is a special reason to single out first is Mr. Sargent's "Israel and the Law," not because it is the finest picture there, but because it is the only piece of mural painting intended for the decoration of a building. In the present day, of course, when large decorative pictures are always painted on canvas in the studio and fixed in place afterwards, instead of being painted in fresco directly on the wall, the words "mural painting" express rather the style and object of the picture than the actual fact. Our feeling is that, even if fresco be avoided, from its difficulties and its susceptibility to climatic influences, it would be far better that decorative mural paintings on a large scale should be painted *in situ*, as it must always be difficult to ensure that an effect that seems satisfactory in the studio will be equally so when the picture is fixed in its permanent position. For the same reason one must hesitate to express an opinion as to the colour effect of Mr. Sargent's painting as seen at the Academy. Its heated pink tone is certainly not agreeable where it now hangs, but we do not know for what special conditions of lighting it may be intended. What we do feel is that a composition of figures in a semi-circular lunette should, for decorative purposes, fill the space and follow the line of the semi-circular boundary more closely. As it is, the grouping presents a rather ragged outline and leaves unshapen spaces between it and the boundary line of the lunette, which do not satisfy the eye. The figures themselves are fine; a translation in the catalogue of the Hebrew inscription round the semi-circle would have enabled the Gentile spectator to appreciate better the extent to which the composition expresses its intended subject.

One interesting point in this Academy is that several well-known artists have somewhat changed their style or turned their hands to a class of subject not before connected with their names. Mr. Colton, the sculptor, who has hitherto been a sculptor of men and women, has produced a fine life-size study of a tiger (called in the catalogue simply "A bronze"), which occupies the centre position in the octagon. Mr. H. W. B. Davis's "Salmon Pool on the Wye" is so much broader and more forcible than usual in the treatment of the water that we should scarcely have recognised it as his; beautiful as his landscapes are, they are to our thinking somewhat over-refined in style hitherto. Mr. David Murray surprises us, in the large room, by a sea-painting, and a very good one; far preferable to his un-composed landscapes or to such a coast scene as "Home Moorings," which we do not call a picture at all, but merely a collection of unrelated details. Mr. T. C. Gotch has deserted his decoratively treated pictures of children, usually more or less symbolical in intent, for a *genre* scene between children in an everyday interior; it is a pretty and expressive group, but he is only doing here what a good many other people can do as well, whereas his previous works filled a niche of their own in contemporary art, so that in this case we are hardly gainers by the change.

Of figure-pictures of the first importance, apart from portraits, there are few, and of these two or three of the smallest are the best; one of them, a scene in a Roman bath, representing Sir L. Alma-Tadema at his best in the painting of water, marble, nude figures, and architecture; among its beauties are the distant view of the sunlit atrium in the rear, and the blue sky showing through the lattice-work over the door in the middle of the composition. It is a delight to see these architectural details painted with such knowledge and effect, and the scene occupied by figures that are always learnedly drawn; yet there is a higher kind of interest in Mr. Edward Stott's "The Two Mothers," the best work he has ever painted, and constituting a real picture in the true sense of the word, in that it is not merely a representation, but a picture with a central idea in which every detail helps, and which is a kind of poem in painting. The one called "The Flight" is also a fine little picture, but we do not quite like the "Flight into Egypt" (for that is really the subject) reduced to *genre*. Mrs. Stanhope Forbes's "The Half-Holiday," though there is no poetic sentiment in it, is another work which may be truly called a picture, in its unity of conception and treatment.

Of the larger figure pictures (other than portraits) there are only three or four that justify their scale by anything commensurate with it in subject and execution. Mr. Draper's "Ulysses and the Sirens" is a very ably painted picture of a classic legend, but there is nothing legendary about it; the Sirens

have nothing weird about them, and the conception of Ulysses does not rise above the commonplace. Want of imagination seems to be the stumbling-block of our painters in treating imaginative subjects. In Mr. Collier's "A Human Baby," a little nude girl on the shore who is viewed with surprise by a mermaid in the foreground, the mermaid has the figure of a modern lady with her hair very carefully done and her nude torso very well painted, so that the bathos of the fish's tail looks preposterous. It remains for a painter with some imagination to try to realise a mermaid that would have a sea-creature character; we have never seen one yet. There are two Lamias and one Thisbe in the exhibition, but they are totally unconvincing; Thisbe is a modern girl in a fancy dress, not an archaic Greek one; and the two Lamias are very harmless sorceresses. A picture cannot be made ideal merely by giving it an ideal name. Mr. Edgar Bundy, in "The City Fathers," has put together a very clever collection of life-size studies of a Dutch Town Council in the days of Rembrandt; some of the heads are admirable in character, but as a whole it is rather deficient in subject. So is Mr. Fowler's "Light and Laughter in the Kentish Hopfields"; it is *genre* on a large scale, and does not justify its scale. Two of the cleverest pictures in the exhibition are also *genre* pictures on a large scale, Mr. Campbell Taylor's "Bed-time" and Mr. G. Harcourt's "The Tracing"; the latter, where the principal figure, the mother, is seen against a large window, is very successful in ease of line in the figure, and in the management of the lighting; both pictures may probably be really regarded as portrait groups (each of them, by the way, contains a charming infant), and in that sense are justifiable; regarded merely as pictures they are too large for their subject. Mr. Hornel's "The Chase," which occupies the central place in Gallery X, although it takes a little determination to accept his peculiar style of painting, is far more of a picture than the two last-named; it is a real study in what may be called artistic language, not a mere presentment of figures. Mr. Hornel has dropped the extreme mannerism which rendered his previous pictures rather like mosaics of gravel and seashells; he is getting into soberer paths, but he has achieved an individual style which illustrates a new problem in painting. A few years back such a picture would have had little chance of acceptance at the Royal Academy; now it is hung in a post of honour—a significant change.

Among pictures which succeed by virtue of brilliant and powerfully handled colour is Mr. Cadogan Cowper's "Venetian Ladies Listening to the Serenade"; not half so interesting, in point of character and dramatic effect, as his devil in the nunnery of last year, but it is a powerful painting of ladies in sumptuous and finely harmonised costumes, backed by two distinct blues—the blue of the night sky and the blue of the canal seen through the balustrade openings. Herr Lybaert's "L'Enfant Divin," too, deserves notice as a very fine piece of minute realism in the old Dutch style, not without a certain transcendental expression in the head of the Christ Child. In a very different way M. Gaston Bussière's "Joan of Arc" also compels notice, as a very good conception of the heroine while still an unknown rustic, seeing "her first vision"; the picture merited a better position.

Portraits are the strongest department of the exhibition; there are certainly a good many that one could well spare; especially most of those that we may call official portraits—likenesses of chairmen of Boards, etc., which might very well be sent straight to their destination instead of being passed through an exhibition where no one wants them. One of the finest pictures of the year is certainly Mr. J. J. Shannon's large portrait of three sisters, in the second room—rich in colour and dignified in character and expression. In group portraits of this kind Mr. Shannon is running Mr. Sargent very hard. The latter is not supreme in ladies' portraits this year, but his full length of the Earl of Wemyss is truly a remarkable work, recalling some of Millais' portraits of men which seemed almost to constitute a summary of character. Mr. George Henry's two principal works are portraits; full lengths of two ladies in very carefully studied costumes, of which the one on the right gives unfortunately the impression of being costume only and no figure inside it; both pictures will be rather disappointing to Mr. Henry's admirers, who have seen much better things from him than these. Another admirable portrait, that of Mr. Leyland Prinsep in Room VIII., goes to the credit of Mr. Shannon; it is a work thoroughly artistic in style and conception. A new artist, Mr. Keith Henderson, has in Room XI. a perfectly charming portrait group of three children under the title "Us"; in the way of child character we have seen few things better. There are many other good portraits which we cannot mention, but no notice of the exhibition could omit the brilliant and bright performance of Mr. Sims in his full length of Mrs. Harold Phillips, walking through the picture in front of a sky of fleecy clouds, the whole composition having that kind of evanescent shimmering effect which attracted everyone in "The Fountain" last year. This is truly making poetry out of portraiture.

It is a good landscape year also, and there are one or two new landscape painters who make a very good appearance; Mr. Eastlake Leader, for instance, with "A Moonlit Common," and Mr. Gardner Symons, whose "Snow-clouds, Bavaria," is a fine broadly painted landscape of unusual character. There is, as usual, the contrast between those who endeavour to convey the prevailing sentiment of a landscape in their own artistic language, and those who aim at absolute realism; the idea in the latter case being, apparently, that if a landscape is reproduced so conscientiously as to be almost an optical delusion, the sentiment will be reproduced with it; which is a fallacy. Mr. Leader's "There is Sunlight in the Valley," for example, comes about as close to actual imitation as painting can get, yet its effect is weak. It is the artist, just as much as the scene he paints, who makes landscape interesting or the reverse. The real object of landscape-painting is not to give the commonplace aspect of a scene, but to extract from it something which is peculiar to it—which is the heart of its mystery. Mr. Adrian Stokes does this in his "Twilight in the Birches," and Mr. Aumonier, in a totally different way, in his sombre sunset over "The Castle Valley, Tintagel." Mr. East's best work is "Amberley Bridge," a bare landscape with a bridge in the foreground; it is less likely to be popular than "Lavingdon Water," but it is a stronger work. Among other fine landscapes are "The Valley of the Wharfe," by Mr. Bertram Priestman; Mr. John Reid's large clearly made-out view of "Porto Maurizio, Northern Italy," a new class of subject for him; Mr. Hughes-Stanton's "St. Jean, near Avignon"; Mr. Harold Speed's fantasy, "The Bridge, Barnard Castle," a night picture in which a special effect is well given; Mr. La Thangue's "Ligurian Roses," a corner of a scene in which sunlight and colour are vividly realised; and Mr. Chas. D. Ward's "A Pastoral," which is hung high, but is a good composition.

We shall have something to say about the sculpture separately.

A PROFESSIONAL DIPLOMA: NOT REGISTRATION.

By MR. EDWIN SEWARD, F.R.I.B.A.

A PERUSAL of voting results in the Plebiscite of Architects obtained by the *Builder*, with the useful correspondence following it, discloses one clear certainty: the fact that something needs to be done. The printed analysis of opinions defines in almost every instance that it is only the method or methods which are questioned, the object itself being recognised as in the fullest degree desirable or imperative.

The history of effort towards architect's registration offers no very encouraging reading. One fact alone—the more recent issue of requests to County Councils and the like to apply influence against an Architect's Registration Bill becoming law—shows its promoters to be still fighting the air. Thus a suggested reform which has been before us for nearly a quarter of a century is still unaccepted by many good thinkers among those who were to be especially benefitted. We have seen the Society of Architects labouring to push their stone up the hill and the Institute regularly rolling it back again, with no moss gathered anywhere in the process. On the contrary, valuable effort, considerable cost, and many enthusiasms are wasted. Otherwise directed, they might have achieved much in a tenth of the time, and no spirit of real unity for the general good has even yet shown itself at all.

Keeping such facts in mind, it can well be urged that the proposals for a Parliamentary Bill should now be dropped.

Instead, the Institute might be duly approached by petition direct from the profession itself (as it now exists, and whether "for better or worse") to logically continue and perfect its own good scheme of qualifying by examination; but adding that true dignity to which those examinations and all fully

accredited fellowships ought to lead—the distinction of a diploma. Any issue of such honour and privilege would of course need to be duly safeguarded by rights and conditions which British architects everywhere — even if they continued non-members of the Institute—could well agree to recognise and uphold.

It may perhaps be advanced against this that the certificate of membership of the Institute is document enough. Years ago that may have been so, but some of the positions within the profession of to-day, not needing detailing here, are every year bringing more call for the desirable "something" which has not yet come. The menace, for instance, to the interests of British Architects from men of other callings hovering on the verge of architectural practice, who sometimes even find methods in these days of chance to sit in high places and who can there wield "occult" influences over public concerns, is not a new or a dying one. It is, however, but one of many, all liable to grow rapidly. Towards them all the architect, whether he be heaven-born artist, poet, chief constructor, or lowly practitioner, could obtain a healthier strength from a judiciously conferred diploma; and the value might be solidified, if after a few years' working it appeared requisite, by an Act of Parliament.

Queen's-chambers,
Cardiff, May 3.

NOTES.

Southwark Bridge.

AFTER prolonged deliberation the Bridge House Estates Committee of the City Corporation are almost ready to commence the preparation of their Report relative to the rebuilding of Southwark Bridge. We understand it is probable that the present site will be utilised and that an effort will be made to obviate the steep gradients which have made the existing bridge so unpopular for vehicular traffic. Considering the nature of the levels on the northern side of the river, we do not see any way of making the new bridge suitable for general traffic save by the construction of an approach viaduct, similar to that connected with London-bridge, passing over Upper Thames-street. A detail of the scheme will probably be the provision for a double line of tramway-tracks, bringing the northern and southern districts of London into closer connexion. While quite admitting the desirability of this, we are not prepared to approve the establishment of a street railway terminus at the City end of an important bridge. It is to be hoped that some consideration will be given to the architectural design of the new bridge. The existing bridge is, in its way, a fine and remarkable structure, and nothing ought to be allowed to take its place which is not equal or superior to it in architectural design.

Reinforced Concrete Buildings.

AN American paper on "Reinforced Concrete Industrial Buildings," by Mr. J. P. H. Perry, is published in the latest issue of the *Journal* of the Society of Chemical Industry. Mr. Perry is connected with a company which has erected about a hundred reinforced concrete buildings within the last seven years. He speaks very favourably of reinforced concrete as a constructive material for industrial buildings, but admits that the condensation which takes place on concrete is a serious drawback to its use for residential work. He says that condensation usually occurs only on the underside of the roof, which is 3 in. or 4 in. thick. The walls are 8 in. to 12 in. thick, and their inside surfaces have a less fluctuating temperature than the under surface of the roof. Therefore there is less condensation upon them than upon the roof. The condensation does not interfere with the use of concrete for most industrial buildings, and even piano factories, in which the wood must be kept perfectly dry, have been built with reinforced concrete and have been found satisfactory. A reinforced concrete wall is more costly in America than a brick wall of equal thickness, but it is common practice to use an 8-in. concrete wall as a substitute for a 12-in. brick wall, and in such cases concrete is slightly cheaper than brick. Reinforced concrete has been found to be from 10 to 20 per cent. cheaper than structural steel fireproofed. Reference is made to buildings in which reinforced concrete floors are carrying loads of 2,000 lb. per square foot. Few architects will agree with Mr. Perry when he speaks of reinforced concrete structures as "ideal buildings," but they have certainly proved of great utility, and his paper is an interesting summary of American experiences and practices.

Tests of Brick Columns.

ADDITIONAL data concerning the strength of brickwork, which may usefully be compared with the results of the tests conducted by the Royal Institute of British Architects' Committee, have recently been published by the University of Illinois. The columns were about 10 ft. long by 12½ in. square, two qualities of brick and different kinds of mortar being employed. One interesting series of results is that exhibited by the proportionality between the strength of the columns and the mortar respectively. It was found that the ratio of the strength of the columns and of individual bricks ranged from 0·27 to 0·37, and that the strength of the columns was greater than that of mortar cubes, except in the case of bricks possessing low compressive strength. The tests emphasise the influence of workmanship, but from the results afforded by columns built with the object of representing poor or careless workmanship, it appears that the loss of strength so caused was considerably less than might have been anticipated. We hope that this result will not be misinterpreted, for in practice the effect of badly-laid brickwork would certainly mean a serious loss of resistance.

Tests of Large Reinforced Concrete Beams.

A PAMPHLET issued by the University of Illinois gives particulars concerning an interesting series of tests conducted by Professor A. N. Talbot with the object of determining the actual properties of beams made under practical conditions of construction. The members were taken from a number of beams prepared for use on the Illinois Central Railroad, and were in the form of slabs 25 ft. long by 6 ft. 3 in. wide by 2 ft. 10 in. deep at the middle, the average weight being 33 tons each, the weight being probably expressed in American tons of 2,000 lb. It is satisfactory to observe that the behaviour of the slabs was similar to that of beams made and tested in laboratories, a result which should inspire confidence in the quality and soundness of reinforced concrete work of judicious design and constructed with care. The tests show very clearly the efficiency of vertical U-shaped stirrups and bars bent up towards the ends in withstanding diagonal tension. Ample precaution against incipient failure by diagonal tension is specially important because of the risk of sudden failure and the impossibility of detecting signs of weakness in places where the sides of beams are not open to inspection.

High-Pressure Fire Hydrants.

AN installation recently completed at Brooke House, Park-lane, is of interest to architects, as it embodies a novel method of utilising hydraulic power mains for the protection of buildings from fire. Water is supplied to hydrants of special design from a ¾-in. main under the pressure of 750 lb. per square inch, but the pressure is reduced in the delivery hose to between 50 lb. and 60 lb. per square inch, the jet of water discharged being of ⅝ in. diameter. Installations of this character should be found very convenient in private houses and other buildings where pipes of large diameter cannot be appropriately applied, and the system possesses the further advantage of being effective in the upper stories of buildings, where the pressure of water in ordinary supply pipes is often too low for the efficient use of hydrants. An incidental advantage is to be found in the fact that in buildings where hydraulic-power is already employed for the operation of lifts or machinery, the trouble and cost of opening up the road and making connexion with water-mains is obviated.

The Royal Academy Dinner.

WE are glad to see that the "speeches" have been restored at this year's Royal Academy dinner, though it is with regret that we observe that the toasts of "Science" and "Literature" did not find their traditional place in the programme. What is thought of the Art of the day by men eminent in Science and in Literature is always a matter of considerable interest, and the Academy dinner is an opportunity for them to bear testimony which ought not to be allowed to lapse. On the other hand, we are glad to welcome a very good pronouncement on Art from the Prime Minister, who, in replying for "His Majesty's Ministers," observed that while among critics and connoisseurs the artistic feeling of the age was measured entirely by the number of masterpieces it produced, it was equally desirable to take into account the standard which appraises the Art of the times by the degree of influence it exercises on the

common life of the people, and the degree to which it raises the standard of taste. "Into our modern civilisation, more or less drab-coloured, it is the office of Art to bring something of the charm and grace that vivified and adorned the ancient and the mediæval world. That is the great social service of Art in this or any other country." The remark is in the same spirit as Emerson's admirable little poem on "Art," beginning:—

> "Give to barrows, trays, and pans
> Grace and glimmer of romance."

It was the best observation of the evening on the subject of Art, and we may be grateful to Mr. Asquith for it.

ARCHITECTURE AT THE ROYAL ACADEMY.—II.

As BEFORE observed, the church designs, which are rather numerous this year, are hung together at one end of the Architectural Room. Some of these are little more than correct Gothic of the ordinary type, of which little can be said. We look rather to those which show some special character in the treatment of church architecture.

Mr. Temple Moore's three drawings in one frame illustrating the "New Nave, Hexham Abbey" (1571), which is one of the most important exhibits, is one of those which would come under the head of orthodox Gothic; but in this case it is rightly so, as an addition to an existing church ought, in our opinion, to carry out the style of the church, or something in keeping with the ancient portion of the building. Three pencil perspectives are given in one frame, which show a suitable treatment in late Decorated style. Mr. Moore also exhibits a small water-colour perspective, rather hastily executed, of the interior of the "New Choir and Transept, Ecclesall Church" (1557); an Early English interior, showing however a wide semicircular arch in one bay of the transept; it is, of course, entirely satisfactory Gothic.

Professor Beresford Pite exhibits a small frame of geometrical drawings of his "English Mission Church, Safed, Galilee" (1558), a curious little church, with a wide low semicircular entrance door and what looks like a columned loggia above, which the section however shows to be only the upper portion of a small narthex. The piers at the angles are furnished with capitals, though in other respects they are not columns or pilasters, as they do not rise from the ground. At the side is a long low window with colonnettes and a heavy label over it. What may be the suitability of the architecture to the *genius loci* we do not quite understand.

Mr. Campbell Jones's "School Chapel, Tonbridge" (1559, 1560), has the merit of looking like a school chapel; the interior is rather spoiled by the organ case, the lines of which are not very decorative. In Messrs. Douglas & Minshull's "New Chancel, etc., St. Andrew's, West, Kirby" (1562), we are left rather in doubt whether the square lantern set angle-wise over the crossing is or is not part of the new work; it is the most original feature of the design. Mr. Ponting's "Christ Church, Shaw, Wilts" (1566: no plan), is a large and important church of good Gothic type, with some special features in the treatment of the aisle buttresses; the whole, with its west end tower and octagonal east end, groups well.

Mr. Tapper's "Chapel for the Community of the Resurrection, Mirfield" (1567, 1578: no plan), is a remarkable piece of work, externally at all events, shown in two beautifully executed water-colour drawings by Mr. Gascoyne. The exterior is one of the things that cannot be pigeon-holed as to style; the west end has two massive angle towers crowned by low open cupolas; between them is a deeply-recessed arch at the back of which is an expanse of red brick wall, all the rest being stone; a large double external staircase enclosed in rusticated masonry, leads up to the entrance-door. A very fine and bold design, which wants a plan to properly explain it.

Mr. Pearson's large drawing of Truro Cathedral and its School and Cloister (1573) was illustrated in our last week's issue. Mr. Arnold Mitchell's "Chapel at Berndorff, Austria" (1570), is a church with a decisive intention about it; low proportions and great massiveness are its characteristic. The choir is square on plan, and makes an immense buttressed mass in the centre of the composition, with a pyramidal roof over it; internally it is domed. The nave, which is very low in proportion, has heavy pointed-arch stone principals with what we take to be a wooden panelled ceiling between. It is not very beautiful, but it has the merit of power and of marked character.

Messrs. Greenaway & Newberry's "Church of the Good Shepherd, Lee" (1579), also merits the praise of having character; this is mainly a brick church with a tower with a high plain stalk breaking out into a decorative upper story with stone turrets and stone-dressed windows. This is the way to treat a brick tower. Mr. Eustace Frere is always original, and his front of "Mission Church, Leyton" (1584), shows a feature which has characterised other designs of his—the invitation to be interested in plain brick walling, for the front is a square mass of brickwork, level on the top, in which is enshrined a stone doorway with sculpture over it and one oval window above. It is almost defiantly simple, and yet there is an interest about it. Mr. Prynne's interior of "St. Wilfrid's, Bognor" (1582), is an excellent piece of internal architecture; brick and stone in bands, with a panelled wooden dado to the lower portion of the piers, and lofty wall arches which include under them the nave arcade arches and the large windows above; there is no plan, but it is apparently a church of the passage-aisle type. Mr. Devlin's "Church of the Holy Cross, Crosshill, Glasgow" (1581), is an interior reverting to the Basilica type, showing a round-arched arcade on Corinthian columns, interrupted by solid piers, treated as pilasters with Corinthian capitals on a level with the apex of the arcade arches: a good piece of work of its type.

"St. Chad's Church, Far Headingley, Leeds" (1588), by Messrs. John Gibbons & Sons, is an exterior perspective showing what we take to be the east end of the church; the great portion of it is solid wall, with a shallow centre buttress with a crucifix at the top of it, connected by round-arched wall arches with the larger flanking buttresses; in contrast to this plain treatment are traceried windows in the upper portion: a good bit of architectural design. Mr. Napier Hemy's "Design for a Church at Ascot" (1593: no plan) is noteworthy for the bold effect of the square mass of an almost fortress-like south tower.

Mr. Beeston Hatchard, in his "Proposed Garrison Church, Khartoum" (1598), has evidently aimed at doing something specially suited to the district and climate; this is mainly a red brick church, surrounded by a verandah in heavy round-arched brick arcading; at the west end a plain and perfectly white tower (presumably plastered) with battering lines and a low pyramidal red-tiled roof; the whole has decidedly the character of a hot climate church. Climatic character of this kind is shown in the very different style of outline drawing of Mr. Jaggard's "Church near Capetown" (1606), a mass of white wall with very small windows cut in it, without any architectural cohesion, and a tall campanile; a very simple affair, but pleasing and suitable for its purpose.

We now come to the "Cathedral Church of All Saints, Khartoum" (1607, 1610), by Mr. Weir Schultz, a very curious piece of architecture, the style of which we presume is suggested by local associations. It is a long low, solid building, with transepts, the roof ridge running right through at the same level; the triangle seems to reign supreme in it; the west front and transepts finish with the same plain solid gable, the projecting piers at the angles being crowned with a small gablet breaking out of the main one; what may be called a clearstory loggia at the side is formed with windows with heads of this shape ∧ on short massive piers. We cannot call it a beautiful building, but it is an original and interesting one, like nothing else one has seen in the way of a church.

Mr. Paul's restored interior of "Pembridge Church, Herefordshire," is illustrated in this issue. Mr. Walters's "Buckfast Abbey Church, Devon" (1615, 1616), we shall publish on the twenty-first of this month; the interior and exterior are shown in two large and effective pencil drawings, one of them containing also a small plan. It is a large church in a mixture of Romanesque and Transitional style, with a lofty tower at the crossing; externally it is almost pure Romanesque; internally it partakes a little more of Transitional style, with pointed arches to the main arcade; it is roofed with a quadripartite vault with moulded ribs to the transverse arches only, the diagonal ones being left as edges of intersection. This is archæological architecture, but it is finely carried out and will make a grand building.

The "Third Church of Christ Scientist" (1618: no plan), by Messrs. Fair & Myer, is certainly not archæological architecture, and looks more like a pavilion than a church; the façade is a crescent on plan, with a very lofty campanile in the centre, in the rear of which a dome is dimly discerned; there are two stories of windows with a kind of lattice tracery over them. It requires a plan to explain the design; and as far as the detail is discernible (it is hung high) we are certainly not captivated by it.

Mr. Matthew Honan's "Proposed new Church, Warrington" (1621, 1626), is a design with very distinctive character. The plan of the church is a very wide one, with a shallow chancel, and a number of subsidiary rooms are grouped on the left of the church, in a lower building which forms part however of the general design. The style adopted owes something both to Byzantine and to Romanesque precedent; but it is an interesting design which cannot be said to be a replica of any existing style. Whether it is an Episcopal church is not stated; we should be disposed to think not.

Some designs for stained-glass windows and church furniture, etc., will be noticed separately under the head of decorative work.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS:

THE COUNCIL'S REPORT.

AT the business meeting of the Institute on Monday the Report of the Council for the year, 1908-1909, was duly adopted, after considerable discussion and criticism, in which Mr. W. Woodward and Mr. Edwin T. Hall were the principal speakers. We extract from the Report some of the principal points touched on:—

"It has been decided to award the Medal this year to Dr. Arthur John Evans in recognition of the eminent services he has rendered to the history of architecture by his distinguished work of exploration in Crete. His Majesty the King has graciously signified his approval of the award.

The following tabular statement shows the present subscribing membership of the Institute compared with that at the corresponding periods of 1907 and 1908:—

Year.	Fellows.	Associates.	Hon. Associates.	Total.
1907	862	1,254	46	2,162
1908	906	1,288	45	2,239
1909	888	1,344	46	2,278

During the official year since the last annual general meeting nine Fellows have been elected, eighty-two Associates, and one Honorary Associate.

The Progressive Examinations were held in June and November, 1908. The Preliminary was held in London, Birmingham, Bristol, Cardiff, Glasgow, Leeds, Liverpool, Manchester, and Newcastle-on-Tyne; the Intermediate in London, Bristol, Cardiff, Glasgow, Leeds, Liverpool, Manchester, and Newcastle-on-Tyne. The Council desire to record their thanks for the valuable services rendered by the Hon. Secretaries and Examination Committees of the various allied societies. The Final and Special Examinations were held in London, and Special Examinations for Colonial candidates were held in Melbourne and Toronto, when seven candidates were examined and five passed. The results are shown in the following tabulated form:—

	Admitted.	Exempted.	Examined.	Passed.	Relegated.
Preliminary examination....	335	68	267	198	69
Intermediate examination..	338	10	328	155	173
Final and special examinations	237	—	237	79	158

The total number of candidates was 910. The number of probationers now stands at 2,923, and of students at 961. The Council again have reason to regret that so large a number of students remain on the list without proceeding to the Final Examination. The Special Examination for Colonial candidates will be held this year at Johannesburg, Sydney, and Toronto. . . .

The most important event in the history of the Institute during the year was the granting by His Majesty the King of the new Supplemental Charter in the month of December. The new by-laws to be applied for under the new Charter are now in course of preparation by the Council and will be submitted to the general body for discussion and approval at an early date.

During the course of the year the Transvaal Institute of Architects and the Architectural Institute of Canada have been admitted to alliance with the Royal Institute.

The Town Planning Committee have carefully followed the progress of the Housing and Town Planning Bill now before Parliament, and have secured the addition to the Bill of an amendment giving to architectural bodies a *locus standi* as "persons affected" at inquiries into town-planning schemes held by the Local Government Board. They have also promoted the formation of local town-planning committees by the allied societies, and they are continuing the investigation and study of the problems of town planning.

The Building Act amendment clauses of the London County Council (General Powers) Bill, 1909, have been considered by the Council as well as by the Practice and Science Standing Committees, and vigorous action has been taken, and is still being continued, with the object of securing such alterations in these clauses as will bring them into conformity with the general opinion of the architectural profession. The views of the Council upon the matter were expressed in a resolution which was forwarded to the Chairman of the London County Council (*Journal*, January 23, 1909), and in a letter from the President of the Royal Institute to the Chairman of the London County Council (March 5, 1909). . . .

Since the issue of the last annual report, the Council have made the following appointments:—

The Institute Representative on the Council of the National Trust for Places of Historic Interest or Natural Beauty—Mr. W. A. Forsyth.

The Institute Representative on the Engineering Standards Committee Sectional Committee on "Bridges"—Mr. Edwin T. Hall.

The Institute Representative on the Special Committee of the International Drawing Congress for the unification of signs and symbols used in drawing—Mr. Francis Hooper.

The Institute Representative at the Annual Convention of the Institute of Architects of Canada—Mr. F. S. Baker.

The Institute Representative on the Royal Commission on the Preservation of Ancient Monuments in England—Mr. Leonard Stokes.

The Institute Representatives on the Joint Committee on Water Regulations—Mr. Geo. Hubbard, F.S.A., and Mr. H. V. Lanchester.

The Institute Representative on the Tribunal of Appeal—Mr. John Slater.

The Institute Representative at the Local Government Board inquiry on Poor Law Institutions—Mr. Edwin T. Hall.

The Institute Representative on the Senate of the University of Sheffield—Mr. J. Alfred Gotch, F.S.A.

The Institute Representatives at the Conference called by the Superintending Architect of the London County Council to consider the questions raised in Part 5 of the London County Council (General Powers) Bill, 1909—Mr. Edwin T. Hall and Mr. John Slater

The Institute Representative on the Court of the University of Liverpool—Sir William Emerson.

The Institute Representatives to give evidence before the Board of Trade Committee on Artistic Copyright—Mr. John Belcher, R.A., and Mr. John W. Simpson.

Since the issue of the last annual report the Council have made the following grants:—

Architectural Association, 100*l.*
Architectural Association Sketch Book, 25*l.*
Architects' Benevolent Society, 125*l.*
British School at Rome, 21*l.*
W. G. Hunt (Acton Competition), 100*l.*
Royal Architectural Museum, 21*l.*
Sheffield Society, 20*l.*

The report of the Board of Architectural Education states that the method of teaching architecture in schools subsidised by Government has been considered by the Board, and a Committee has been appointed to draw up a memorandum on the subject for discussion by this Board before communicating thereon with the Board of Education.

The attention of this Board has been directed to the fact that the London County Council School of Building at Brixton now includes a Day Technical School, admission to which is restricted to boys between thirteen and fifteen years of age who have passed the sixth standard of an elementary school, and the Council of the Institute, on the recommendation of the Board, having communicated with the London County Council, suggesting that while training given in this school may be most useful for those intended for the building trades, it differs materially from that recommended by the Board for the education of architects.

The question of the advisability of recommending the Council of the Institute to grant exemption under certain conditions from the Final Examination to students of Schools of Architecture at the Universities of Liverpool, Manchester and Sheffield; the Architectural Association, London; King's College, London; and University College, London, has been before the Board and has been referred to a Committee appointed by the Council of the Institute to consider the whole subject of the Institute examinations. . . :

The following modifications in the Intermediate and Final Examinations, recommended by a Joint Committee of the two Boards, will come into operation at the summer examinations this year:—

The Intermediate.

The following specific subjects will be omitted from this examination in future:—

1. Classic Ornament.
2. The Characteristic Mouldings and Ornament of each Period of English Architecture from A.D. 1000 to 1550, with their application.
3. The Orders of Greek and Roman Architecture; their Origin, Development, and Application.
4. Outlines of the History of Mediæval and Renaissance Architecture in Europe.

Instead of the above, two papers will be set on (1) the General History of Architecture; and (2) the Purpose of Architectural Features in Relation to the Buildings in which they occur.

Answers to be accompanied by explanatory sketches.

The Final and Special.

The following specific subjects will be omitted from the examinations in future:—

Subject 11.—The Principal Styles of Architecture: their Features, Mouldings, and Ornament. (i) The Characteristic Mouldings, etc., of the Special Style selected by the student; (ii) the Characteristic Mouldings, etc., of the Principal Styles of Architecture.

Instead of the above, the following papers will be set:—

Morning.—The Principles of Architecture: their Theory and Application. Illustrated by drawings.

Afternoon.—A written thesis. Illustrated by sketches.

The report of the Art Standing Committee states that among other important matters which the Committee have had under their consideration is Southwark Bridge, which the Bridge House Estates Committee of the City has had under consideration. The Council were asked to remind the Corporation that they had on a previous occasion approved the suggestions of the Royal Institute of British Architects in the matter, and to offer their further services when required. . . .

The Committee have made several representations to the Council with regard to the proposed completion of the Wellington Memorial in St. Paul's. Neither the Committee nor the Council have at the date of this Report succeeded in obtaining from the Completion Committee any information as to how the constructive problems which arise are proposed to be dealt with. There appears to be no architect in charge of the work, and the facts put forward in Mr. Belcher's letter to the *Times* of October 29 remain uncontroverted. . . .

The proposed demolition of Bath-street, Bath, formed the subject of energetic representations to the Council. A formal protest was sent officially to the Bath Corporation; the President sent a letter to the *Times*, which was supported by a leading article.

The report of the Literature Standing Committee mentions that the Council having agreed to a grant for the printing of a new catalogue of the Loan Library, the work of its compilation was undertaken by the Librarian, and is completed up to the end of the year 1908. It is now in the press, and will shortly be available for members.

The Committee, at the Council's request, submitted the following suggestions for papers:—

1. Roman Architecture in the South of France, by Professor F. M. Simpson.
2. Subject to be selected by the author, Professor W. R. Lethaby.
3. Gothic Sculpture in France, by Mr. E. S. Prior.
4. An evening to be devoted to papers on Colonial Architecture—Canada, Australia, New Zealand, South Africa.
5. Professor Hamlin to be invited to read a paper during his visit to England next winter.
6. Architecture of the Balkan States, by Mr. George Hubbard.

The report of the Practice Standing Committee states that the subject of professional advertising, which was under discussion at the date of the last annnual report, has been further considered, and a resolution thereon sent up to the Council. At the request of the Council a form of inquiry has been prepared for circulation amongst foreign correspondents as to the practice obtaining in this matter in their respective countries. The replies are not yet to hand.

The question of a revision of the Institute form of contract, which was under consideration at the date of the last annual report, has been further considered. At the invitation of the Council, a statement dealing with recent decisions in the Law Courts upon the liability of architects under the existing form of contract, was drawn up for the opinion of Counsel. On considering it, the Council decided not to take Counsel's opinion, but adopted the recommendation contained in the report of the Committee (referred to in the last annual report) that the words 'so as to' should be substituted for the words 'nor shall it' in clause 30 of the existing form of contract, thereby adopting the suggestion intimated in the judgment in one of the cases above referred to. . . .

The report of the Science Standing Committee states that the Committee have been engaged, among other subjects, in considering the production of a standard of quality for materials used in the preparation of paints, and in view of the importance of the matter, and the large amount of detail involved in making any useful investigation, a sub-committee has been appointed and is making progress with the necessary preliminary work. . . . A resolution was passed and submitted to the Council to the effect that the Chairman of a Standing Committee should not hold that office longer than two years, and that each Chairman should be *ex officio* a member of the Council of the Institute. A resolution upon this subject was submitted to the Council of the Institute. . . ."

THE ARCHITECTURAL ASSOCIATION.

THE last ordinary general meeting of the Architectural Association for the present session was held on Friday last week at No. 18, Tufton-street, Westminster, S.W., Mr. Walter Cave, President, in the chair.

The minutes of the last meeting were read and confirmed and some nominations read.

The following announcements were then made by Mr. C. Wontner Smith, Hon. Secretary:—

Annual Dinner on May 12, to be held at the Georgian Hall, Gaiety Restaurant, at 7 p.m. Tickets, price 5s. each, may be obtained in the office.

First Summer Visit to Maidenhead on May 15. Full particulars will be found in the "Official Announcements," May number of the Association *Journal*.

Camera and Sketching Club Visit on May 15 to East Hall and Barking.

The following gentlemen were then elected as members, *i.e.*, Messrs. B. H. Jackson, Wimbledon; S. H. Reeves, Enfield; F. C. Anson, London; J. Early Smith, Kensington; M. C. Broad, Harlesden; T. F. H. White, London; and C. J. Esch, Ealing.

It was announced that Mr. W. Acworth had been reinstated as a member.

On the motion of the Chairman the following were heartily agreed to:—

A vote of thanks to Mr. John J. Burnet for his donation to the Library of Messrs. Collignon & Pontremoli's book on "Pergame."

A vote of thanks to Mr. James Williams for his donation of two drawings by the late George Devey.

A vote of thanks to Messrs. J. G. N. Clift and A. C. M. Edwards for their donation of a number of lantern slides.

The Chairman also stated that the annual meeting of the Association Athletic Club would be held at the Stamford Bridge ground on Saturday afternoon, June 5.

Election of Officers for Next Session.

The Chairman then read the scrutineers' report and announced the election of officers for session 1909-10. The number of voting-papers received was 350—a decrease of fifty-five in the number voting last year. Of these, three were rejected as invalid. The following is the result of the election:—

President.—Henry Tanner.
Vice-Presidents.—F. Dare Clapham, C. Wontner Smith.
Ordinary Members of Council.

Sir A. Brumwell Thomas	Horace Field
Gerald C. Horsley	G. Gilbert Scott
Arthur Keen	Baxter Greig
F. Winton Newman	Herbert A. Hall.
R. Frank Atkinson	

Ex-officio Member of Council.—Walter Cave (Retiring President).
Hon. Treasurer.—Henry T. Hare.
Editor of the Architectural Association "Journal."—G. L. Elkington.
Hon. Librarian.—Percy May.
Hon. Secretaries.—Maurice E. Webb, Edwin Gunn.
Other Officers.
Solicitor.—W. A. Jamieson.
Hon. Assistant Librarians.—W. D. Catheart, A. J. Perrin.

The Chairman proposed a vote of thanks to the following gentlemen for acting as scrutineers:—Messrs. R. J. Buck, W. B. Dukes, G. D. G. Hake, R. Lowry, H. L. Samson, and E. J. Tanner.

Bruges and Neighbourhood.

Mr. C. Wontner Smith, Hon. Secretary, then read the following paper on "Bruges and Neighbourhood":—

"Mr. President and Gentlemen,—The subject of my paper this evening, 'Bruges and the Neighbourhood,' was suggested by the visit paid last year to Belgium by the Architectural Association on the occasion of our Annual Excursion, when a very enjoyable week was spent in visiting the principal towns in the vicinity of Bruges, which we made our headquarters.

These old Flemish cities are, of course, well known to many of you. Belgium is easily accessible, and, possessing many architectural attractions, forms a splendid ground for study. To the majority, therefore, I can only recall scenes already familiar, but those who have not been as yet to Belgium may find a short description of the principal cities of some interest, and I propose to sketch briefly the outlines of their history, mentioning the best-known buildings and architectural features, merely giving you my impression of them, with no attempt at an exhaustive criticism; which I do not feel competent to undertake were there even sufficient time at my disposal for the task.

Interesting as they are, it is not within the scope of this paper to deal with the origin and development of these cities, which in the Middle Ages formed the great commercial centre of Northern Europe; but before proceeding further with the subject I should like to mention a few of the more important facts concerning their earlier history.

Belgium was originally peopled by a race of Celtic origin, and they were the last of the northern tribes to withstand the Roman invaders, although eventually crushed. After the power of Rome was finally broken, the first Flemings descended on the shores of Northern Europe. These men were of the same race as our own Saxon forefathers, and men of the same spirit, hating slavery and oppression, and content only so long as they retained their freedom. They were quick to resent any attempt to reduce them to serfdom, and consequently the country during the Middle Ages was the scene of perpetual warfare. They alone amongst the nations of Europe succeeded in retaining any degree of independence.

There is little to learn from history about this part of Europe from early times till the IXth century, when Baldwin of the Iron Hand, the first Count of Flanders, took up his residence upon a small island situated between the rivers Boterbeke and Roya.

This place was Bruges, destined in after years to become one of the most important cities of the Middle Ages. Baldwin was the real founder of Bruges, although it existed before his time, probably in the form of a fortified camp. The old Bourg was pulled down, and Baldwin erected a new fortress on the site now occupied by the Hôtel de Ville and Palace of Justice. Around this was grouped Baldwin's own residence, the chapel, the court prison, and on the north side the sanctuary, in which were placed the relics of St. Donatian, which had been given to him by the Archbishop of Rheims.

Of the Bruges of Baldwin's days, all that now remains is the crypt underneath the chapel of the Holy Blood, situated on the west side of the Hôtel de Ville. The two streams by which Bruges was built still exist; the Roya runs in the same course as it did then, but it has been tunnelled over and built upon in the course of the intervening centuries. The Boterbeke has long since been diverted, and now only skirts the town.

Bruges passed through many vicissitudes between Baldwin's days and the XVth century, when it reached the summit of its prosperity. Apart from its other claims, the city must have special interest for us. Its rulers have been closely associated with those of our own country, and many well-known figures of English history have had reason to be grateful for the shelter obtained within its walls. The wife of Canute the Great, the sons of Earl Godwin, Hereward the Wake, St. Thomas à Becket, and in the XVIIth century Charles II., to mention only a few of the number who it is known resided or, at any rate, visited the city. I will not, however, trouble you with a lengthy account of its history through the Middle Ages.

The source of its prosperity was partly due to its geographical position and extensive trade. Formerly connected with the sea by means of the Zwyn, an arm of the North Sea now long since dried up, in the XIIIth and XIVth centuries Bruges was the principal port of Europe. It was the great manufacturing centre of the north. The great cities of the Low Countries were the industrial capitals of the north and west, and equal in importance with Florence, Venice, and Constantinople in the south and east. They imported wool, largely from England, and manufactured it into cloth. This was their staple industry; and as the centre of the Hanseatic League carried on extensive trade with Europe and the East. In the Middle Ages Belgium in the north and Italy in the south formed the commercial and artistic centres of mediævalism. This is shown in the character of the buildings and architecture. In Belgium we do not find the magnificent palaces, the marbles and mosaics af Italy, but cloth halls, town halls, merchants' houses, and simple brick dwellings, typifying the commercial pursuits of a great trading community. A country which could produce artists of the genius of Memlinc, the Van Eycks, Rubens, and such masterpieces of architecture as the cloth hall at Ypres, Hôtel de Ville in Brussels, and many other buildings too numerous to mention, must be recognised amongst the other nations renowned for their art and architecture.

The most perfect piece of architecture in Bruges is perhaps the Hôtel de Ville, which stands in the centre of the Place du Bourg on the south side. It is a beautifully proportioned Gothic building, dating from the year 1376, and was erected by Count Louis of Maele, probably finished about the year 1420. The architect is supposed to be Jean de Valenciennes, but it is not known for certain. The treatment of the windows is a common feature in Bruges; the outer mouldings running up between the stories forming a kind of panel treatment in between. It is found in the brick gables and other buildings, and this may probably have served as a model. The niches between the windows contain statues of the Counts of Flanders. These are not the original ones; they were destroyed by the French revolutionaries in the XVIIIth century. The whole of the upper story is occupied by the great hall, which has a very fine open-timber roof.

This is a photograph of Mr. Curtis Green's charming drawing of the Hôtel de Ville, and shows the whole façade of the building. On the right is the Chapel of the Holy Blood, and the building on the left is the Maison de l'Ancien Greffe; the latter is a very ornate semi-Renaissance and not particularly interesting building, dating from 1535. It has been restored, and is used now as a Court of Justice. The fireplace in the Court Room, which formed part of a former building occupying the same site, is an interesting piece of Renaissance work, erected to commemorate the battle of Pavia, which resulted in the declaration of the independence of Flanders. The lower part is of black and white marble, and the overmantel is of oak. The central figure is that of Charles V. of Flanders, and on either hand are statues of his ancestors, parents, and other members of his family. It has been restored.

The Chapel of the Holy Blood, to which I have already referred, is the chapel in which is deposited the vial which tradition says contained some of the water in which Joseph of Arimathea had once washed the body of Our Lord. This relic was brought from the Holy Land in the XIIth century by Dierick, of Alsace, Count of Flanders, cousin of Charles the Good, and deposited in the old chapel which Baldwin of the Iron Hand had built. This relic has been associated in a remarkable way with the history of Bruges. During the troubles with Ghent in the XIVth century it was lost; but later was found in one of the waterways close to the Beguinage. It was hidden during Reformation times, and only restored to its present resting-place in 1819. This chapel is a building of two stories, the lower one being the crypt of St. Basil, probably the oldest building existing in Bruges. The upper chapel was rebuilt in the XVth century. At the time of the French Revolution it had fallen into great disrepair, and was restored in the XIXth century. The portal and staircase of the chapel are on the west side of the square.

They date from the XVIth century, and, like the chapel itself, have been restored. The statues are of bronze.

I have a protograph of a portion of a very interesting bird's-eye view of Bruges, the work of Marc Gheeraerts, in the year 1562. It is particularly interesting, as it shows the ancient Bourg as it existed at that date, with the group of buildings on the south side, including the Hôtel de Ville, the Chapel of the Holy Blood, and on the left the Maison de l'Ancien Greffe. The old Church of St. Donatian then occupied the north side of the square. This building, originally founded by Baldwin, was pulled down in the XVIIIth century. Its place is now taken by the Fish Market. To the right is the belfry and the old Cloth Hall, a XIVth century building, which has long since disappeared. The river Roya can be traced in its course between the belfry and the west side of the Bourg, and along under the old Cloth Hall. It follows the same course still, but, as already mentioned, has been built over since.

The belfry occupying the central position in the Market Place is the most conspicuous structure in Bruges. In nearly all the principal Flemish towns the belfry is the central and dominating feature, towering up sometimes many stories over the surrounding buildings. In Flanders the belfry was the symbol of civic liberty. The sounding of the bell in the Middle Ages was a call to arms, and of many a tragic scene has the belfry at Bruges been the silent witness during the 600 years it has stood in the old Market Place. It is, perhaps, the most interesting of all Flemish belfries. Poets and writers have vied with each other in praising the beauty of its outline and the charm and richness of its sweet-toned bells:

> Low and loud and sweetly blended,
> Low at times and loud at times,
> And changing like a poet's rhymes,
> Ring the beautiful wild chimes
> From the belfry in the market of the ancient town of Bruges.

Its architectural merits are, however, another matter. It is a strange conglomeration of stories and styles. It has been destroyed three times, has been added to and altered; its very height gives it a dignity which its architectural merits fail to do. The belfry has a strange history. No doubt the original structure was built in the days of the first Counts of Flanders, and was constructed of rough stone like other buildings of the time. It was totally destroyed in the XIIIth century, and afterwards rebuilt, the two lower stories dating from this period. The octagon was added in the XVth century, and the parapet 100 years ago.

There is another tower in Bruges more striking than the belfry, and a far finer piece of architecture. I refer to the tower of the Church of Notre Dame. This dates from the XIIIth century, and is of magnificent proportions. It is built of brick, and rises to a height of just 400 ft., measuring to the top of the spire. The late Gothic portal of the north side is a very charming little piece of work; nestling at the base of the tower, it looks absurdly small in proportion.

The Cathedral of St. Sauveur close by has been much spoilt by later additions. The transept and the group of chapels round the choir are quite the best parts. The tower is comparatively modern.

By far the most interesting church in Bruges is the Church of Jerusalem or Holy Sepulchre. This is quite a small building, erected at the beginning of the XVth century by two brothers named Adornes. The plan is most peculiar and quite unique. The nave has no aisles. The sanctuary is underneath the tower, which is at the east end, and is reached from the nave by two stone staircases 10 ft. or 12 ft. above the rest of the church. The exterior is as quaint as the interior. It is built of brick, and the tower above the roof level becomes octagonal. There are two small angle turrets at this stage in front, but at the back the walls are simply sloped off. The whole is surmounted by a wooden flêche, terminating in a large golden globe. The grouping and general appearance of this little building is extremely pleasing. It might be called, perhaps, the "Miracoli" of Bruges.

But, however interesting, the churches do not form the chief attraction of these Belgian cities; there are the old brick houses, with the stepped gables and traceried windows that are their chief charm. Until about the XIVth century the houses were probably built of wood. As the number of inhabitants increased, and better buildings were required, brick was more generally employed. Nearly all the public buildings in Bruges were erected in the XIVth and XVth centuries, and the greater number of them are of brick.

The Flemish bricks are unequalled in colour and texture. They are small in size, very uneven in surface, and the graduation in colour has a most charming effect. The windows are generally grouped together in recessed panels; the outer mouldings enclosing them run right up to the top story. The windows themselves are square-headed, and sometimes have stone lintels and dressings, but more often of brick, the space between the top of the window opening and the enclosing arch being generally filled with tracery. When mouldings are used they are simple in character, but the plain chamfer often sufficed.

The later examples are rather overloaded with detail and tracery, but many of them are well designed; the variety of treatment is wonderful. Some of the most noted of the old houses and halls still remaining in Bruges are the halls of the merchants of Genoa and Spain, the Maison des Orientaux, which was the residence of the great traders of the Hanseatic League, the Gruthuise, Ghistelhof, and many others. One of the most charming little buildings, for its design and general proportions, is that known as the "Poorter's Loge." It was built in the middle of the XIVth century, and was used then as a kind of mediæval club-house.

Bruges in the Middle Ages must have been a city of turrets and spires. Many of them, alas, disappeared, but there are a few still remaining, and of these a very good example is the one behind the "Poorter's Loge." There is another one close to the Quai du Rosaire, at the back of the Hôtel de Ville.

I should just like to mention another interesting building in Bruges, and that is the Hospital of St. John, a building founded in the XIIth century. It forms a very picturesque group opposite the Church of Notre Dame, and in it are to be seen some of the best examples of Memlinc's work. It is rather difficult to get a good view of the building, as the streets are narrow at this point. One of the most interesting parts is that close to the canal. To the right of the old XIIIth century gateway, now built up, is the chapel, and beyond it the present entrance and some later additions which have been recently restored.

The ramparts which formerly surrounded Bruges have been pulled down, and of the old picturesque gateways only three now remain.

Those who have been to Bruges have, no doubt, been struck by the number of small Renaissance doorways to be seen in many of the side-streets, set in little gable ends of brick. These are the entrance doorways to the almshouses, or "Godhuises," which were founded in the XVIIth century.

After the troubles with Maximilian Bruges became almost depopulated, and owing to the silting up of the Zwyn, which formerly connected it with the sea, its position as a manufacturing city was considerably affected. Most of the weavers left Bruges and settled in Antwerp and other places, and at this time Bruges became the home of many of the neighbouring religious houses, who erected convents and hospitals in all parts of the city. Many of the doorways are well designed, and have over them in some instances niches containing figures.

There are many other things I should like to say about Bruges, but it is impossible in a short paper as this must be to do more than make a passing reference to the many interesting buildings which it contains. I fear I have treated the subject very inadequately, but as I want to say something about the other towns we visited, I must pass on.

A few hours were spent at Damme and Courtrai, the former at one time the port of Bruges, and a most interesting place. However, I can only mention the more important towns.

Like Bruges, Ypres was, in the XIVth and XVth centuries, a very important and flourishing town, and one of the principal centres of the manufacturing trade. The chief interest lies in the group of buildings of which the Cloth Hall is the central feature. The Cloth Hall at Ypres is the finest in Belgium. Its enormous length, the dignity and simplicity of its design are most impressive, and seen from the Market Place with the Church of St. Martin rising in the background, it forms one of the finest groups of buildings to be seen anywhere. This Cloth Hall was commenced in the XIIIth century, and was not completed till 100 years later. The main façade is 335 ft. long, and the Cloth Hall proper occupies the upper story.

These old cloth halls of Belgium are a distinctive product of a commercial community, the legacy left by the trading republics of the Middle Ages. It is commercialism embodied in building, and they remain to-day monuments to the enterprise and genius of these old Flemish burghers.

The building at the east end of the Cloth Hall is called the Nieuwerk, a Renaissance structure dating from the year 1620. The upper floor of the Cloth Hall consists of three long galleries with open timber roof, containing frescoes representing incidents in the history of Ypres. Inside the courtyard are two very interesting wooden gables, with large recessed windows, in which there is some old glass, and a picturesque timber passageway supported on wooden cantilevers.

Ypres possesses, in addition to its Cloth Hall, the exceedingly fine Church of St. Martin's, formerly the cathedral of the district. It is of very ancient foundation, and dates from the XIIIth century, erected on the site of a much earlier church. The western tower is a lofty and beautifully-proportioned piece of work, later than the church itself. It has never been completed, but the base of the stone spire with which it was originally intended to be finished just shows above the roof. It was designed by Martin Utenhove, of Malines. Portions of the church are now being restored, and there is a talk of completing the spire, but I think it would be much better to leave it alone. It is built of brick and stone, and is nearly 200 ft. high. The interior of the church is equally interesting; the columns and arches are of a darkish-green stone, and the choir, which has no ambulatory or chapels, contains some good Renaissance woodwork in the shape of stalls and confessionals.

The font, at the west end, is a charming piece of Renaissance work. It is of bronze, and the font-cover is attached to a wrought-iron bracket on the wall.

Beyond these two buildings Ypres contains nothing of very great interest. There is one other building, however, that I should like to mention, and that is the Boucherie, or Meat Market, which stands in the south-west corner of the Grand Place. The lower stories are of rough stone work, and date from the XIIIth century. The upper part is of brick, with the typical Flemish gables and traceried windows.

Of Ghent I do not propose to say much I was only there a few hours, and consequently know very little about it. Like other Belgium cities, Ghent is being modernised, but some of its old building still remain Time will not permit me t

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do more than just mention one or two of them.

The Church of St. Nicholas, one of the oldest buildings in Ghent, claimed a good deal of my attention. Unfortunately, the interior has been greatly modernised, but the exterior is much as it was, in fact it has been improved considerably since the houses which formerly stood all round and against it have been removed. It piles up magnificently, and looks equally well from any point of view.

Though not particularly attractive outside, the cathedral at Ghent has an impressive interior. Apart from its architecture, its chief interest lies in the fine examples of the Van Eycks' work which it contains. Mention must be made of the Renaissance sacristy, which is a very charming piece of work.

The Hôtel de Ville, a building of the florid Gothic type, has been considerably restored. It has several interesting features, the best being perhaps the rectangular Gothic staircase, with pierced balustrades and brick-vaulted roof running up to the first floor.

Before passing on to the Oudenarde, in conclusion, I should like to mention the group of old buildings of the Quai aux Herbes. The well-known Skipper's House is one, and perhaps the best of its kind in Belgium. It was erected in 1531, and is now being restored. Next to it is a Renaissance house, and beyond a very early building, used as a granary in the XIIth century. It reminds one of the lower part of the Boucherie at Ypres, the character of the stonework and general design is somewhat similar.

The architectural interest in Oudenarde centres round the Hôtel de Ville and the Church of St. Walburga. The latter dates from various periods. The tower is of magnificent proportions, and possesses, incidentally, a really musical peal of bells.

The Hôtel de Ville is a small building, erected in the late Gothic period, and although rather florid and overloaded with enrichment, is a very good piece of work of its date. Inside there is a well-designed late Gothic chimney-piece and an oak screen, the work of Paul von Shelden.

During the restoration of the central turret about ten years ago Mr. Ellis Marsland, who was then touring in Belgium, seized the opportunity of taking a series of photographs while the scaffolding was there, and these form a unique collection of views of the different stories right to the apex, including the lead figure above the crown."

The paper was illustrated by a large number of lantern views of buildings in Bruges and neighbourhood.

Mr. H. D. Searles-Wood, in proposing a vote of thanks, said that the visit to Bruges last year made an interesting change in the usual excursion programme of the Association, but it was felt that it was a tour which could have been taken by anybody, and did not require the guidance which they had during the annual excursion. The value of the excursions as a rule was that they afforded access to buildings which are not open to the general public, but at Bruges he did not think there was a single building that they visited that the ordinary tourist would not have access to, and it was a matter of some regret that they were not privileged to see some of the home life and the interesting private houses which the towns undoubtedly contained. As far as the country districts around the towns are concerned, it was singular how little architecture was to be seen. He presumed that the discords of the time were such as to prevent architectural buildings being erected. That part of the country was the cockpit of Europe and open to all sorts of invasions.

Mr. W. Curtis Green, who seconded the vote of thanks, said it was rather a valuable thing sometimes to have a paper of this character in which one saw illustrations of mediæval buildings, because there was, he thought, nothing that made them think so much as mediæval buildings—perhaps because the period was nearer to us than many others. They could take mediæval buildings to pieces—find out their bones and muscle and skin and that sort of thing; but, somehow or other, after that was all done (and while we knew as much as those old builders did, and could, in a way, do better work than they did), we could not do such charming work as they did. We tried, but we failed, and that gave one something to think about. The reason, it might be, was that, like the lady in the play, *What Every Woman Knows*, our modern work was lacking in charm.

Mr. R. P. Oglesby supported the vote of thanks, and said that there was no doubt that age—the age and the time in which the buildings were erected—had a great deal to do with the effect we saw. Time in the construction of the buildings was not such an object as it was now in erecting our buildings, and that had much to do with the charm that these old buildings possessed.

Mr. F. Dare Clapham said that two precedents, he hoped, had been set that night—one, that the retiring Hon. Secretary should always read a paper, and the other that they should occasionally have a paper on the Annual Excursions. Members were not always in the fortunate position of being able to attend these annual gatherings, and if they could hear about them in a paper like that they had listened to it would be a matter of interest to all of them. The paper had been very interesting, but many of them knew very little about their own country, and the Annual Excursions afforded opportunities of seeing places that the ordinary member of the Association would never otherwise see at all. As Mr. Searles-Wood said, the buildings and places visited in Belgium could have been seen by anyone, but on the English Excursions members were privileged to see places that were not accessible to the ordinary member or to the public.

Mr. Theo. Fyfe expressed the hope that some of the slides they had seen that evening would find their way into the collection of the Association.

Mr. S. Flint Clarkson said that inside Bruges there are many canals, and the association of good buildings with water always resulted in special picturesqueness. There was a great deal of modern building being done there, and it was being very well done, the architects being animated with the spirit of the old work.

Sir A. Brumwell Thomas said it was interesting to hear and see different impressions of a place like Bruges, and while they had hon. secretaries like Mr. Wontner Smith, who could illustrate his remarks so well, he supported the idea that the retiring Hon. Secretary should read such a paper. In recent times there had been a tendency to eliminate the sentiment from places like Bruges, and he believed that that city was shortly to be greatly changed. A waterway connected with the sea had been made, and so many factories and warehouses were being erected that Bruges might be spoilt, just as there was a tendency to spoil Constantinople. Changes that improved trade, etc., did not necessarily conduce to the poetical idea of such places.

Mr. F. Winton Newman said, as to modern architecture in Bruges, he had been told that architects received a great deal of encouragement, and that the local authorities pay a third, or some such proportion, of the cost of a frontage of a house if it is in a style similar to the old work. He knew of one building, however, to which the authorities objected because it did not conform to their rules as to following an old model, and they refused to pay the money. In revenge, it was said, the architect painted his work a vivid yellow, green, and red.

Mr. Harold Brittan said there was one feature about Bruges from which our jerry-builders might take a lesson. When the inhabitants of a house felt that their exterior was dirty they painted it, but, as a piece of clever graining was to the wood it copied, so was their painting to the original brickwork. The bricks were painted with a subtle variation, not too vivid, not too violent, in carefully-selected tints; the mortar joint was white, and kept its original thickness, about half an inch. The whole was so painstakingly done, so lacking in hardness and mechanical accuracy, that only on the closest examination by an observant person was the method revealed. The top stages of the belfry at Bruges were all the more interesting as being occupied by shrivelled, undersized men, who looked more like mannikins in a fairy-tale. He felt that the Maison de l'Ancien Greffe, or Le Palais de Justice, as it was now called, should not be passed over as lacking in interest; its ornate semi-Renaissance told of the Spanish occupation in the early XVIth century. There was something in its bright guilding and exotic intricacy which, given a more southern sun, would show to greater advantage. The arch towards the Marché au Poissons was particularly impressive. The Marché itself was a good example of the adaption of simple classic, and made up for its smell by its design. The interiors of Notre Dame and the Cathedral of Saint Sauveur were examples of how colour decoration should not be used; coat after coat of whitewash forming a bulgy background for the crude, ill-considered colour-work. The clean, garnished stones of our English cathedrals stood out with an extra charm on the return of the party from Belgium. By far the most interesting object within Notre Dame was a piece of sculpture by Michelangelo, one of his early works, a Madonna. The Virgin had rather an elongated face, the Child was beautifully placed, and had a rather sad expression. The white marble group was greatly enhanced by a black marble niche for a background. The Eglise de Jérusalem was built by a crusader who thought he was erecting a copy of an Eastern church. This building seemed to have influenced Gilbert Scott in a recent church at Bournemouth; the nave was quite low, while over the chancel rose what might be called a transept or tower. Bruges, like so many old-world towns, was built by the wealth of commerce, and in the advance of time decayed; but having passed through a comparative period of stagnation, a reflex action of prosperity was brought about by the sympathy of travellers who wished to stop a while and hear its tale and feel its quaintness. It was interesting to see the average tourist through the eyes of an inhabitant. Instead of being up at eight o'clock, seeing the market in full swing, with its clatter and babble, its colours in the beautiful early morning sun, he tries to sleep on, somewhere in the Rue Nord du Sablon, till nine or ten, which was anything but easy with the incessant mechanical grunt of sluggish steam trams and the quarter-hourly bombardment of clanging bells that insist on exhibiting their number, so quaintly out of tune. People tried to see things too much through the spectacles of Baedeker or a guide, instead of through their own eyes. They seemed to be more interested that this man did so-and-so, that is such-and-such a date, that is so many feet high—details that go in at one ear and out the other—instead of: Do I really think that beautiful, and why? He could not help feeling the similarity of Bruges to our decayed cinque-port, Sandwich—the encircling of the town by a wall and moat, the Barbican with the stumps of towers flanking the arch over the roadway, the Flemish gables and brickwork, the small streams running through the streets, the sea receding from its walls, and the flat country round. The interest of this part of Belgium was centred entirely in the towns; the country round on familiar acquaintance became monotonous and depressing with its long lines of poplars and straight canals. What might be called a summarised description of Bruges was—"Bricks, bridges, bells."

The Chairman (Mr. Cave), in putting the vote of thanks, said that what struck him when he was at Bruges was that the brickwork was really brickwork—the bricks were used as bricks should be, and that was always the case when there was practically only one material to be had. The full value was got out of the brick, and in Bruges the work was most effective. When the Dutch brickwork came over to England and was used so much in the eastern counties, in the big examples like Layer Marney, and further west at Sutton Place, the brickwork, with the terra-cotta used, seemed to overreach itself. In the simplicity of it at Bruges and in the towns of Belgium and Holland they had the best examples of brickwork. The tower of Notre Dame in Bruges was all brickwork, and it showed that it was possible to get an immense and rich effect out of the material if properly used. The charm of Bruges in consequence of its canals and the effect on the architecture had been referred to by Mr. Flint Clarkson, and what he said applied to other towns in the Low Countries—more especially in Holland. In consequence of the canals there were no cellars in the buildings; and at Amsterdam, where large stores were needed, the "cellars" were in the roof, with the result that immensely lofty roofs were obtained, which were nearly always used as stores and which resulted in the very picturesque outline which one was so familiar with.

The vote of thanks was heartily agreed to.

Mr. Wontner Smith, in reply, said that a great deal more could have been said about Bruges and the neighbourhood, and a paper could have been written on almost any one of the buildings referred to. The brickwork in Bruges was delightful, and no one could fail to be impressed with the city. He was quite in agreement with the remarks about the modern work in Bruges, which was being extremely well done from the point of view of tradition and old work. The question was whether in 100 years' time it would be difficult to distinguish between the XIIIth or XIVth century buildings and the XIXth century buildings, so complete was the copy of the older buildings, and he was rather inclined to doubt whether that was as it should be. All the slides he had shown that night would find their resting-place in the collection of the Association. Mr. Hennings, Mr. Searles-Wood, and Mr. Marsland said he might make that announcement. He was indebted to Mr. Curtis Green, Mr. Ernest George, Mr. Phené Spiers, Mr. Needham Wilson, Mr. Swan, and Mr. Sutton Wood for the loan of drawings.

Votes of Thanks.

Sir A. Brumwell Thomas said he desired to offer, on behalf of the Association, their thanks and appreciation to the President for his services to the Association. They all felt, as he had no doubt the President would feel, a certain amount of regret that the President was bringing to a close the long period of work which he had performed for the Association—a longer period, he thought he could say, than any previous President had served, for Mr. Cave had not only acted as their President for the last two years, but he had, during Mr. Balfour's presidency, to carry out the duties of the President on account of Mr. Balfour's unfortunate illness. They felt deeply grateful to the President for his long services on behalf of the Association, and for the manner in which he had conducted their affairs. The last year or two had been very important years in the history of the Association, and it must be gratifying to the President to know that during his term the debt on the new building had been wiped out, and that a scholarship had been offered, which showed that old friends rallied round them. In addition to the President they were losing Mr. Louis Ambler, who for many years had been a member of Council; and also Messrs. Wonnacott and Needham Wilson. Mr. Curtis Green was also leaving the Council, but they were not losing him altogether, as he had taken up other duties. To all those friends and helpers they would like to offer grateful thanks for their valuable services. To the President they were especially grateful—and regretful that the last night of his presidency had arrived.

The President suitably and briefly replied, remarking on the high honour it was to serve the Association as President. The work of the Association was very complex, and no one who had not been President could realise all there was to be done. He should like to express his thanks to the Council, especially the retiring members, for their support during his term of office.

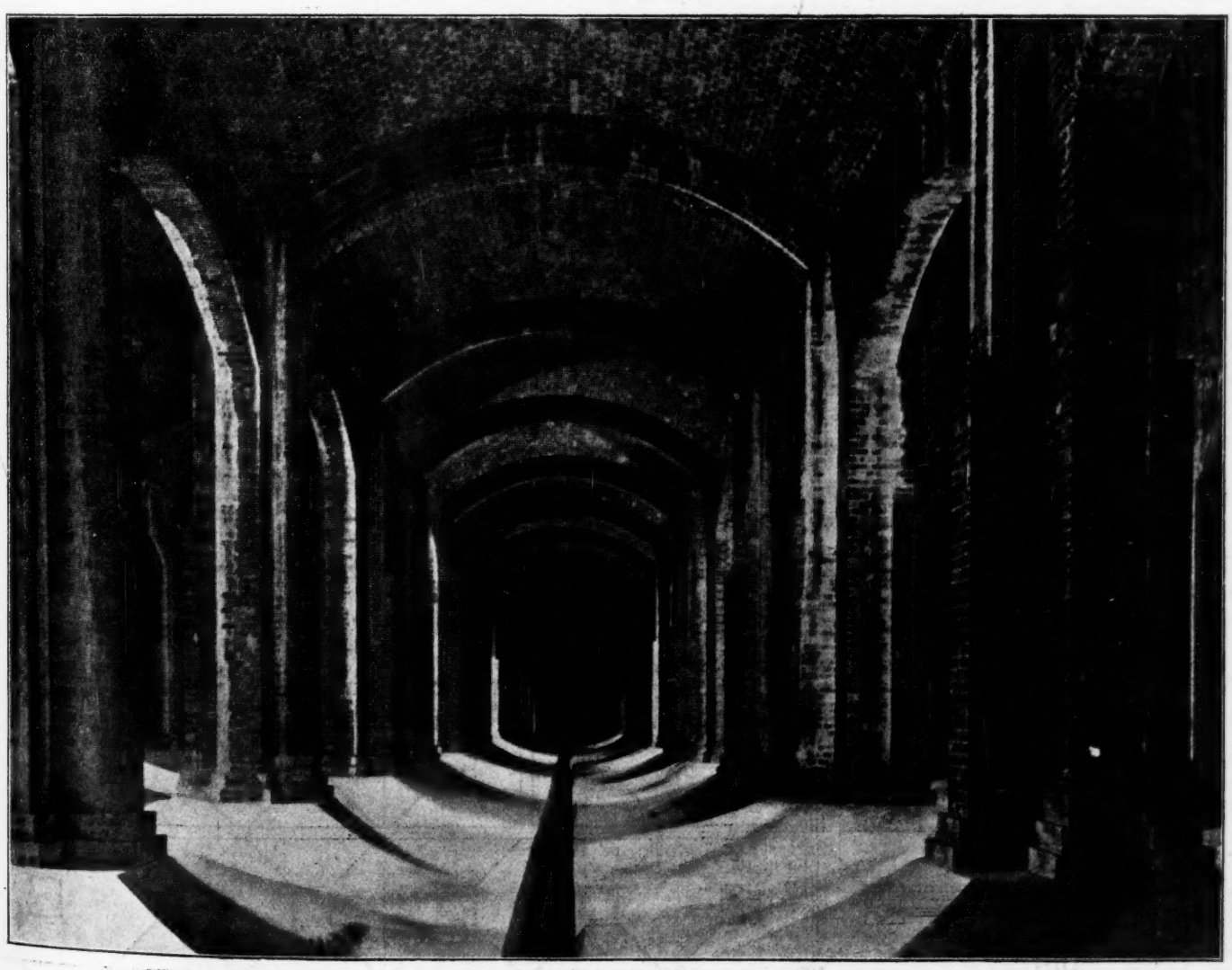
The meeting then terminated.

The last indoor meeting of the session will be on the occasion of the annual dinner, on May 12, at the Georgian Hall, Gaiety Restaurant.

THE BEACHCROFT RESERVOIR, HONOR OAK.

LOOKING down upon the enclosure of the Metropolitan Water Board at Honor Oak from the railway or high lands above, there is absolutely nothing to be seen of the fine new reservoir which covers an area of some 16 acres, and is capable of storing nearly 60,000,000 gallons of water. It is true that the general outlines of the work are marked by the sloping earthen banks which cover the outer walls, and that the central valve-house projects above the levelled earth-filling above the arches of the roof.

To appreciate in anything like an adequate manner the magnitude of the task recently



Honor Oak Reservoir: View in Interior.

brought to a successful issue, it is necessary to penetrate and explore, as we did on Wednesday afternoon, the vast underground structure comprising four vast halls, each covering well-nigh 4 acres, ranging in height from 25 ft. to more than 35 ft., and whose roof consists of arches supported on brick piers stretching away in long vistas finally lost in dim obscurity.

The reservoir comprises four chambers or reservoirs of brick and concrete, the longitudinal division wall running approximately north and south, and the transverse wall east and west. Hence for the purpose of identification we will refer to the chambers as the north-east, north-west, south-east, and south-west reservoirs. The outer walls of the south-east and south-west reservoirs, which are level with or below normal ground level, consist of a series of flat arches, being so designed with the object of affording increased resistance to earth pressure; while the north-east and north-west reservoirs have concrete retaining walls faced with brickwork. The longitudinal and transverse division walls are arched as shown in the part plan reproduced on this page, the space between the arches being filled in with mass concrete. The thickness of the walls ranges from 6 ft. at the middle of each bay to 10 ft. at each buttress.

Along all the outer and division walls brick counterforts project into the reservoirs and constitute very substantial buttresses to the walls, while also strengthening the roof construction.

The floors throughout are of concrete, the surface of which takes the form of inverts, grooved so as to provide for the support of brick piers carrying the roof, the piers being connected north and south by jack arches, while from the top of the walls so formed spring the main covering arches, the haunches of which are filled with concrete, and this, in turn, is covered with clay puddle and earth.

A layer of puddle, 36 in. thick, extends around the outer walls, and is bonded with the clay over the roof arches, thus giving ample assurance of perfect watertightness. The main structural features of the reservoir are generally indicated by the drawings given as illustrations to this article.

At the intersection of the division walls is the valve-chamber, from which the filling and emptying of the four reservoirs will be controlled by means of headstocks operated from the floor of the valve-house above.

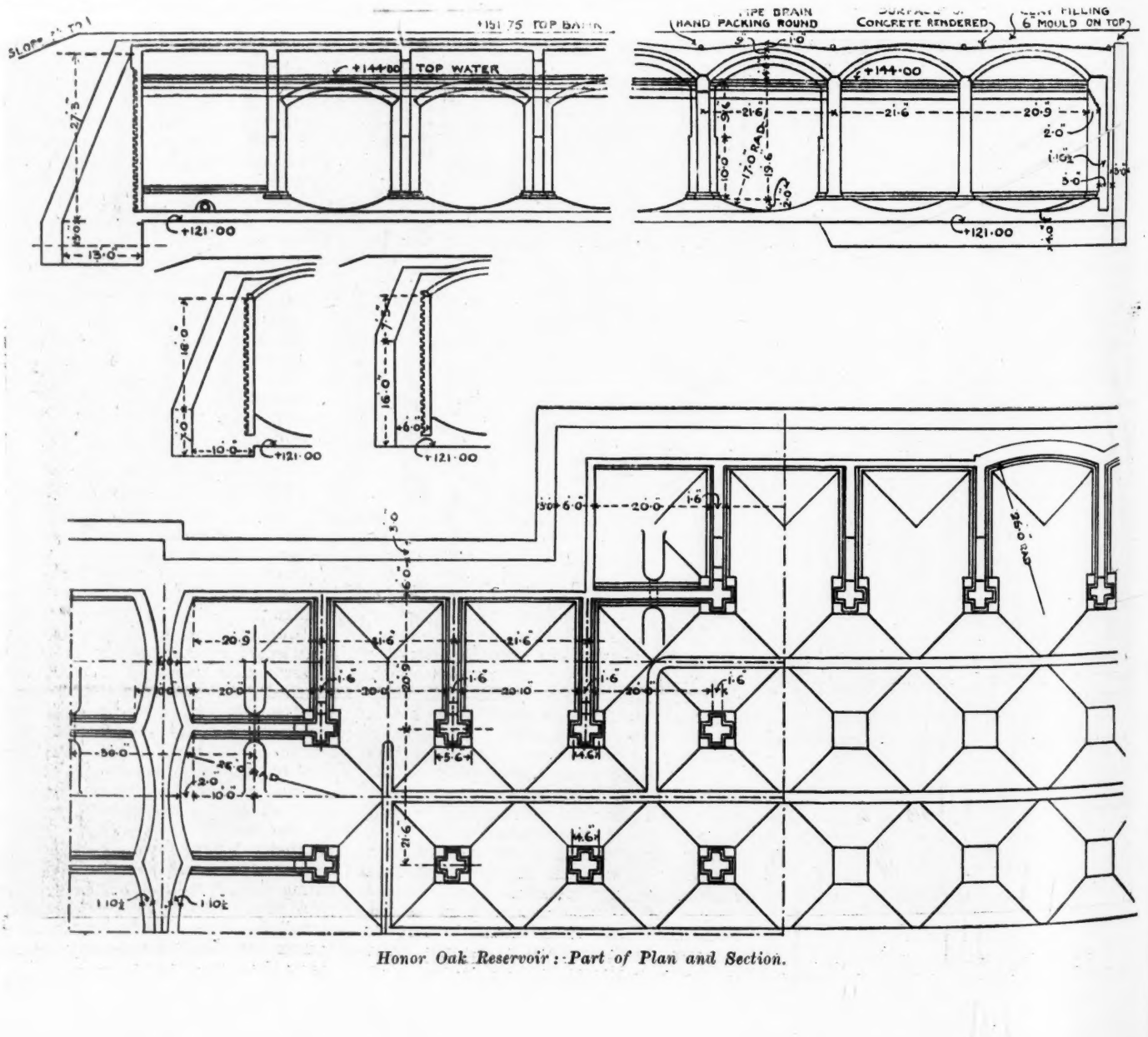
Engineering problems of considerable difficulty have been presented for solution during the execution of the works, owing to the nature of the ground, the proximity of railway lines, and the heavy pressures involved, the latter being sufficiently indicated by the statement that the reservoir will have to hold up the weight of more than 250,000 tons of water.

Architects and builders will probably best gauge the extent of the works by the fact that more than 16,000,000 bricks have been required, together with some 95,000 cubic yds. of concrete, and fully 100,000 cubic yds. of excavation. The bricks were made on the site, and material excavated was utilised as far as suitable for brick-making purposes.

The works were designed from beginning to end by Mr. J. W. Restler, M.Inst.C.E., first as Chief Engineer to the Southwark and Vauxhall Waterworks Company, and later as Deputy Chief Engineer to the Metropolitan Water Board. The contract was entrusted to Messrs. J. Moran & Son, the total cost having been 225,000*l.* approximately.

The Beachcroft Reservoir is undoubtedly a remarkable example of engineering skill fully justifying the complimentary allusions to Mr. Restler which were made by Mr. E. B. Barnard, the Chairman of the Board, and by the Lord Mayor, in the course of the ceremonial opening on Wednesday.

We need only add that the inauguration of the new reservoir is one more satisfactory proof of the energetic policy displayed by the Water Board with the object of providing efficiently for the present and future needs of the immense population within the boundaries of their jurisdiction.



Honor Oak Reservoir: Part of Plan and Section.

THE INSTITUTION OF MUNICIPAL ENGINEERS.

A GENERAL meeting of this Institution was held on April 24 at the Building Exhibition, Olympia, when papers were read and discussed.

Essential Formulæ in Structural Engineering.

The first paper read was by Mr. Horace Cubitt, on "Essential Formulæ in Structural Engineering." In commencing his paper he said that formulæ have been stated to constitute a mathematician's shorthand. From this it would seem evident that, where the facts which it is desired to represent are in no way complex or involved, the use of formulæ, or in other words, the use of shorthand, is not necessary. Unfortunately, however, the large majority of engineering, and even architectural, textbooks attempt to carry a cargo of formulæ which, instead of acting as useful ballast, is of such ponderosity as almost to sink the ship of the reader's interest and attention.

In the present paper it would be his endeavour to demonstrate that, when a proper analysis of the question is made, the real essential formulæ for structural engineering purposes will be found able to be counted

on the fingers of one hand. The several members met with in structural work could be grouped under four heads:—

(1) Where the forces act directly away from the member, producing tension.
(2) Where the forces act directly to the member, producing in the first instance chiefly compression.
(3) Where the forces act in a transverse direction to the axis of the member and induce a bending tendency, tension compression and shear being consequently produced.
(4) Where members are subjected at the same time not only to direct tension or compression, but also to compression tension and shear due to bending.

In the cases of members in tension, once the total stresses had been calculated, the determination of the required sectional area of the member to resist such stresses was simple. No one thought of using a formula, with members in compression in the most elementary form of construction coming under this heading—ordinary walls—calculations to determine thickness were rarely necessary. The thickness of walls was almost always fixed by schedule.

Coming to the question of reinforced concrete pillars, in the report of the Reinforced Concrete Committee convened by the Royal Institute of British Architects, a formula was given which was applicable to columns whose lengths do not exceed eighteen times their least dimension, and in which the reinforcing bars are satisfactorily tied together in order to resist any bending tendency. Upon a little investigation, however, the process of calculation was seen to be so simple that to deal with it by means of symbolic representation appeared merely an unnecessary burdening of one's memory with symbols. To obtain the safe bearing capacity of such a pillar it was simply necessary to find the sectional area of the whole pillar, add to this fourteen times the sectional area of the steel, and treat the combined area thus obtained as that of a plain concrete pillar in direct compression. It was more reasonable to think of this in plain English than to have recourse to symbols.

The reason for the apparently arbitrary figure was that the respective moduli of elasticity of steel and concrete in compression were in the ratio to one another of fifteen to one. With the materials acting together the steel therefore provided a resistance per unit of area fifteen times that of concrete. If the steel were stressed so as to provide more than this resistance the concrete would suffer. It was therefore necessary to add to the area of the concrete fifteen times the area of the steel. But, taking the area of the whole reinforced pillar, this obviously includes both the area of the concrete and—putting it thus for the sake of clearness—one time the area of steel; consequently it was necessary to add to the total area of the pillar fifteen minus one—viz., fourteen times the area of the steel. When wood struts and iron and steel stanchions of a length customary in ordinary practice were considered, the circumstances were different. In addition to the direct pressure there was the tendency to fail by bending, and to an average person it was practically impossible without formulæ to carry in the memory all factors which have effect in determining the strength of such members. Formulæ here appeared to be essential, and of these it was generally considered that the most reliable was the adaptation by Professor Rankine of Gordon's formula.

Essential Formulæ (1)
(as applicable to steel columns and stanchions).

$$p = \frac{f}{1 + a\frac{l^2}{r^2}}$$

where p = unit breaking stress = unit elastic limit of material in compression (about 18 tons per square inch)
l = length
r = least radius of gyration
a = a factor usually taken as :— $\frac{1}{12000}$ for free ends, $\frac{1}{36000}$ for fixed ends.

The same units of force, length, and area being respectively taken throughout.

It was to be noted that in the application of the Gordon-Rankine formula there existed in the radius of gyration a factor whose determination from the first principles would necessitate too great a demand upon the time and the mathematical knowledge of the average engineer. For all ordinary joists, angles and tees, and compound stanchions of common type, the radii of gyration were given in the steel section books of the various manufacturers, but for wooden pillars, cast-iron columns, and built-up stanchions of other than standard section, it would be necessary to work out the radius of gyration, and for this there is a fairly simple practical method.

The radius of gyration was equal to the square root of the ratio which the moment of inertia bears to the cross-sectional area. This was usually written $r = \sqrt{\frac{I}{A}}$. The fact that it is the *square root* perhaps hardly needed emphasis, but the early edition of Vol. IV. of the well-known "Rivington's Notes on Building Construction" contained an inaccuracy, the square root being omitted from the equation. The area could be simply obtained, and the least moment of inertia may be approximately deduced from that of a rectangular figure, which is $\frac{b\,d^3}{12}$, b and d equalling breadth and depth in the same units. As it is the *least* moment of inertia which is required to be obtained, it is of course the direction in which the post or stanchion is weakest which has to be considered, and the breadth of the section considered, except in the case of squares and circles, is greater than the depth. It is worthy of notice that the least radius of gyration of a rectangular section is $\frac{\text{least dimension}}{3{\cdot}47}$, and of a solid column $\frac{\text{diameter}}{4}$. In a hollow column it will be somewhat more than this, so to take $\frac{\text{diameter}}{4}$ in the case of all circular sections is to be at any rate on the safe side.

The use, however, of such elaborate formula as Rankine's for every single calculation to determine the strength of a member is in practice almost unknown. Either straight line formula of the American type are adopted or, as is more customary in this country, graphical diagrams, or tables, based on the more precise formulæ are used, from which the safe unit stress in accordance with the ratio of length to least radius of gyration may be obtained. By the use of such diagrams or tables the calculation of struts or stanchions was a very simple and straightforward matter. . . .

Coming again to reinforced concrete, we had here a combination of materials, of which not only is the safe stress of the steel, which takes up the tension, about twenty-seven times that of the concrete which takes up the compression, but also a further difference of characteristics has to be considered, as the modulus of elasticity of the steel is about fifteen times greater than that of the concrete. The steel, that is to say, is this much stiffer than the concrete. Thus, prior to the ultimate provision of the materials in the ratio demanded by their respective safe resistances—a process to some extent analogous to that adopted in the case of a cast-iron beam—it is necessary to find the neutral axis, for the position of this will greatly affect the moments of the resisting stresses in the steel and concrete.

The finding of the position of the neutral axis is probably the most difficult of the several operations necessary in the calculation of a reinforced concrete beam, and in ordinary calculations the position arrived at is only hypothetical, for the neutral axis in such beams varies in position according to the extent of the loading of the beam and the consequent variations in the moduli of elasticity of both materials. The old beam theory that sections remain plane sections both before and after bending is generally accepted for the purpose of practical calculations for reinforced concrete beams. Many authorities, indeed, question its exact theoretical applicability to such beams, but almost all admit that the results of calculations on such basis are sufficiently near for practical purposes. The position of the neutral axis varies in accordance with the ratio of the area of steel to the area of the concrete, and also in accordance with the ratio of the moduli of elasticity of the two materials. In practice, however, the ratio between the two moduli being taken as constant, the position of the neutral axis in any particular beam of fixed sectional area varies only in accordance with the ratio of the area of the steel to the area of the concrete, or to, as it is more often termed, the percentage of reinforcement, any increase in the area of the steel causing the neutral axis to become closer to the steel.

[We have only space to give those portions of the paper which were more especially the subject of discussion. A long paper dealing largely with formulæ cannot well be summarised.]

Considerable discussion followed, which was taken part in by Messrs. Latham (Penzance), J. H. Markham (London), E. Fiander Etchells (London), J. Reay (Hertford), Adams (London), and Davidge (Lewisham). The chief question raised by Mr. Latham was whether in the formulæ of the Royal Institute of British Architects any allowance was made for deterioration of the steel by rust or other causes, or whether any account was taken of the liability of the weakening of the steel by forgings. Mr. Markham expressed his difficulty in following the author's statement that in reinforced concrete they had a combination of materials of which not only is the safe stress of the steel which takes up the tension about twenty-seven times that of the concrete which takes up the compression, but also a further difference of characteristics has to be considered, as the modules of elasticity of the steel is about fifteen times greater than that of the concrete. He failed to see how the figures of twenty-seven and fifteen were arrived at. Mr. Etchells, however, subsequently demonstrated, by a blackboard demonstration, the soundness of the author's conclusions, and further pointed out that it was very probable before long they would have reinforced concrete principles quite on a different basis. At the same time practice would not change. Mr. Davidge strongly urged the necessity for the standardisation of the different formulæ. Mr. Cubitt, in reply, said the Royal Institute of British Architects' formulæ were based on the workmanship being of absolutely the best character. It would certainly be an advantage to have a standard set of symbols for formulæ, and if the Institution could push that forward it would be doing valuable work.

Sterilisation of Water and Sewage Effluents.

Mr. Shenton then read a paper on "The Practical Sterilisation of Water and of Sewage Effluents," in which he said his object was to deal with the practical sterilisation of sewage effluents and of water, as distinguished from the theoretical side of the question, which has been treated at great length by chemists and bacteriologists. Hitherto most people in this country have regarded the idea of sterilisation of water or of sewage effluents with disfavour, and eminent authorities have declared it to be practically impossible. But the sterilisation of sewage effluents is practised in America and has been recommended by the Board of Agriculture of that country, while the sterilisation of water supplies has been adopted on an extensive scale at many places on the Continent and in America. Moreover, during the typhoid epidemic at Lincoln in 1905 the water supply of that city was actually sterilised with hypochlorite of sodium with most satisfactory results, and many lives were thereby saved. The water

being hopelessly polluted at the time, and no other supply being available, it is absolutely certain that nothing short of sterilisation could have rendered it fit for consumption.

Of the objections raised to the sterilisation of sewage effluents, the only one of serious practical importance is that which relates to storm water. It has been urged that in times of storm a large quantity of sewage must necessarily pass into the rivers untreated from storm overflows—not only from overflows which take place at the sewage disposal works, but at overflows taking place from the sewers direct. Against this objection it must be first clearly understood that, even assuming that storm water must overflow from the sewers direct, there is no great difficulty in adding the sterilising agent to the liquid as it leaves the overflow.

The cases where the sterilisation of sewage effluent is essential will be similar to the following instance observed by the author recently. A certain river forms the only possible supply of a large district served by a water company. The water has recently been found to be unsatisfactory in quality, but wells sunk at great expense have not yielded a supply sufficient to enable the water company to dispense with the river supply. The author observed a large sanatorium for consumptive patients on the banks of this river above the intakes, but within sight of the river's mouth. There were here and there other similar sources of pollution along its course. What doubt can exist that in this case the effluent passing to the river from the sanatorium ought to be sterilised? Many people would say it ought never to be permitted to go into the river at all, but it would be absolutely impossible to prevent the sewage from eventually finding its way into the natural drainage channel of the district, and it would be quite impossible to supply the district with water from any other source at the present time. The fact that this stream is polluted with drainage off the land and by many other smaller things is of small consequence, beside the horrible pollution taking place from the sources already mentioned. In such cases, assuming that the scientists are correct, the only safe course to adopt must be to sterilise all sewage effluent entering the river, and also to sterilise the water drawn out of the river for drinking purposes. The same principle applies in larger cases.

[The remainder of the paper went at great length into details as to the action of various sterilising agents, and was summed up with the following conclusions:—]

"(1) That the sterilisation of sewage in large quantities is practically and economically possible.

(2) That this may be most economically effected by careful use of chemically-prepared hypochlorite at very small works, and at larger works, or works of moderate size, by the use of electrolytic hypochlorite.

(3) That such treatment may be given where required to tank effluents as will render them inoffensive, and that when necessary such effluents can be sterilised.

(4) It is possible to remove clogging matter due to growths in filters or in sprinkling apparatus, by a strong dose of hypochlorite.

(5) That sterilisation of water by the ozone processes has now been adopted so largely as to leave no doubt as to its practical and economical possibility.

(6) That the sterilisation of water by means of electrolytic hypochlorite is also possible, and that though not generally adopted at present, the system should be carefully tested, as it would apparently be a cheaper process. For this reason comparative experiments are desirable."

Several written communications were received. Count de Frisse sent a detailed statement of the cost of ozonising water at St. Maur, which worked out at 25s. 5d. per million gallons. Dr. Alexander sent some details of the sterilisation of water at Poplar, and Dr. Rideal gave some particulars as to ozonisation similar to those recently given by him before the Royal Sanitary Institute.

Dr. Digby expressed his view that sterilisation of sewage effluent was inevitable in the future. The growth of the population and the growth of civilisation mean a larger use of water by the individual citizen, and the result was that a larger volume of polluted liquid was turned into their rivers. His preference was for the hypochlorite process.

Dr. Currey also spoke highly of the hypochlorite processes, but admitted that he was not familiar with the ozone process.

Mr. Weever (Gloucester) considered that experimental work ought to be carried out by the Local Government Board instead of being thrown on towns, the ratepayers of which were already overburdened.

Mr. Pegg emphasised the importance it would be to the surveyor if, as was claimed, the hypochlorite process would effect the cleaning of the distributing apparatus and the filtering media. He pointed out that there were conditions prevailing regarding the disposal of sewage in some towns which would render sterilisation of the effluent unnecessary, and remarked that the danger of passing an Act of Parliament was that a cast-iron rule was made applying to all places.

Mr. Latham asked if they did not run some danger in seeking to destroy all germs in water, seeing that it was well-known that the pathogenic germs were in many cases destroyed by the beneficent germs.

Mr. Adams remarked that whilst ordinary purification of sewage effluent might be sufficient in many cases, yet where such effluent was likely to be of danger when discharged into rivers sterilisation was necessary, and he would prefer the hypochlorite process.

Mr. Wynne Roberts felt that some care was necessary in the chemical treatment of water lest danger to the inhabitants might result, and whilst he did not imply that the application of hypochlorite sodium would be prejudicial, still he thought further information was necessary before its use was extended in a large measure.

Mr. Shenton said he had no prejudice in favour of the hypochlorite process, but, looking at it all round, he thought it was cheaper. At the same time no doubt much could be said for the ozone process. It was for the chemist and bacteriologist to tell them when water was polluted, and it was then the time for sterilisation.

Design and Requirements of an Electric Power Works.

Mr. Horace Boot, M.I.E.E., read a paper on this subject. He first laid emphasis on the necessity of securing a suitable site where there would be no nuisance and where there would be plenty of room for extension. The buildings required for a power-house where steam-engines were to be used were:—(1) The main engine-room, (2) the boiler-house, (3) the switchboard arrangements and automatic coal-handling plant, (4) the pump-house, (5) a fuel storage building, (6) workshops, (7) stores and storekeepers' office, (8) offices for the staff, (9) baths and washhouses for the men, (10) battery-room. In the case of small works it was not necessary to employ an architect, but when it came to the design of large works it was always advisable for the consulting engineer to employ one. There were so many different methods and forms of construction now known that it was impossible to enter into them, but, generally speaking, for small power-houses nothing beat brickwork with the cantilever roof and lantern lights running along the top. For very large power-houses concrete and steel construction was the best. Provided there was sufficient land, it was advisable to build a dwelling-house for the engineers in charge and cottages for the principal workmen, so that the men were always near if required. He was afraid power-works did not lend themselves to architectural embellishments, firstly, on account of the capital cost having to be kept down, and, secondly, in that their general shape could not be very sightly. The buildings must be fireproof, and the materials used were best left to local conditions. Inside, the walls should be lined to an height of about 10 ft. with white glazed bricks and finished off with ornamental chocolate or other bricks. The style of flooring for the engine-room was very difficult to settle, but so far as pattern went, it was hard to beat mosaic or tessellated paving. It should be set up in squares, as otherwise there would not be sufficient give, and it would crack owing to variations in temperature. In many works tiles were used, but the trouble was when that heavy tools were dropped the tile was usually broken. Hardwood flooring had been tried, but with oil and grease about it was difficult to keep clean, and when dirty became very slippery. For the boiler-house he was in favour of using blue bricks placed sideways, on account of their lasting properties. The design and height of the roof varied according to the plant to be installed. Mr. Boot gave a description of the London County Council power-house at Greenwich, and then explained his design of a producer gas-engine building and plant at Chichester. The works were, of course, small, but would probably be followed by all small towns where an electricity supply is not at present given. The buildings only comprise an engine-house. The walls are brickwork, the roof steel framework and slated, the flooring terrazzo, and the generating plant was interesting as one of the first (if not the first) depending upon its supply when employing engines of the Diesel type for prime movers. Here only a simple engine-room was required to house the engines and dynamos, switchboard and other auxiliaries; no boiler or gas-producer house was required. The large storage tank containing the crude petroleum was better placed outside the buildings, and need not be covered in. The cost came out, from the building point of view, very low, which was one of the advantages of using Diesel oil-engines for generating electric power.

He was of the opinion that for small towns, where coal was dear, nothing could beat the results obtained by these engines, and what with metallic filament lamps reducing the cost of electricity to below that of gas (in small towns), and still allowing a margin of profit for the shareholder or municipal authority, there was no reason why many towns now, which hitherto had been too small to put down works, should not follow the example of Chichester.

The discussion on the paper was adjourned till the next meeting of the Institution.

Formation of Southern District Committee.

The inaugural meeting for the formation of this Committee was held at Olympia, London, on Saturday, April 24, there being present Messrs. E. A. Stickland (Windsor), Horace Boot (Tunbridge Wells), T. C. Barralet (Godstone), Geo. H. Widger (Godstone), Charles Turton (East Grinstead), G. B. Hartfree (Alton), S. B. Drake (Leatherhead), J. Randerson (Sevenoaks), L. Randerson (Strood), John Marshall (Malling), W. Stephenson Raine (Hungerford), A. H. Jennings (Erith), H. F. Newland (Newport, Isle of Wight), E. W. Ray-Johnson (Uckfield), and E. W. Veale (Farnham).

Upon the motion of Mr. E. W. Veale, who had undertaken the preliminary work of organising the Committee, Mr. Horace Boot, A.M.I.Mech.E., M.I.E.E., was unanimously appointed Chairman *pro tem.*, the question of the appointment of a permanent Chairman being left until the next meeting. Mr. Veale temporarily accepted the hon. secretaryship.

It was proposed by Mr. Turton, seconded by Mr. Randerson, and carried, that London, be the central meeting-place of the Committee for ordinary business, but that upon invitation being extended to the Committee by members in varying centres of the district, for inspection of works, etc., the meetings should be held at such centres, if so decided.

Upon the invitation of Mr. Horace Boot it was proposed by Mr. Hartfree, seconded

by Mr. Ray-Johnson, and carried, that the next meeting of the Committee should be held on June 5 at Tunbridge Wells. A vote of thanks to Mr. Boot for presiding, and to Mr. E. W. Veale for organising the Committee, terminated the meeting.

ARCHITECTS' TECHNICAL BUREAU.

FURTHER meetings of the Bureau Selection Committee were held at the Building Trades Exhibition at Olympia, on April 27 and 29, and a number of manufacturers brought their various specialities and materials to the notice of the Committee.

The gentlemen on the Committee present were Messrs. Louis Ambler, Walter Cave, H. C. Corlette, A. W. S. Cross, Wm. Flockhart, George Hubbard, H. D. Searles-Wood, Henry Perkin, and W. A. Pite.

The following goods with a description thereof were submitted and approved:—

BRICKS AND TILES (The Hazelwood Brick Company, Cranleigh).

A selection of bricks and tiles of different shades, with moulded bricks of various descriptions.

"REXILITE ROOFING" (Vulcante, Ltd., 118, Cannon-street, London, E.C.).

This is a waterproof roofing material in rolls, easily applied, and which forms an economic roof covering for concrete roofs or flat roofs of light buildings.

"PATENT VULCANITE ROOFING" (Vulcanite, Ltd., 118, Cannon-street, E.C.).

A roof covering consisting of several layers of sheet asphalt combined with Vulcanite composition applied in a hot liquid boiling state with a brush, making the whole roof surface one jointless sheet impervious to water. Principally useful as a roof covering for flat roofs, and also to form roof tanks and other waterproofing works in connexion with buildings. Guarantees are given for long periods.

"MONKS PARK STONE" (The Bath Stone Firms, Ltd., Bath).

This is a good weather stone, and well adapted for external dressings and for interior work, and has been used with success in large cities and manufacturing towns. Reference to many large buildings can be given.

"VERGER'S IMPROVED FRESH AIR INLET" (Messrs. Verger & Co., 3, High-street, Woking).

This is an improvement on the ordinary design of a mica flap inlet, by means of which the flap is entirely protected from injury by being well set back from the front grating. It is said to have met with the full approval of surveyors and sanitary inspectors acting under the London County Council.

"WILLESDEN UNDERLINING AND UNDERSLATING PAPER" (The Willesden Paper and Canvas Works, Ltd., Willesden Junction, N.W.).

Willesden paper consists of a specially made and specially strong brown paper treated with a solution claimed to render it waterproof and extremely durable. It is used for underlining, underslating, and other damp courses. The same treatment is applied to all kinds of canvas, cotton flax, etc., and both paper and canvas are used extensively by the Government, United Services, railway companies, etc.

TILES (The Somerset Trading Company, Ltd., Bridgwater).

The above firm submitted a selection of patent roofing interlocking tiles.

CAST-IRON DRAINAGE APPLIANCES (The North British Plumbing Company, Ltd., 15, Carteret-street, Westminster, S.W.).

Inspection chambers made with branch inlets specially cast, providing a simple and rapid access to drains for inspection and cleaning purposes. They have no bolts to crack or lose, and are hermetically sealed, and instantaneously opened or closed. Cast-iron sealed gullies coated inside and outside with Dr. Angus Smith's Solution.

CASEMENT FITTINGS (The Crittall Manufacturing Company, Ltd., 11 and 12, Finsbury-square, London, E.C.).

The above firm submitted a selection of casement cockspurs and casement stay fittings.

ANTIQUE BRICKS OF BROKEN COLOUR (The Binfield Brick Company, Bracknell, Berks).

These bricks have a soft, deep colour in various shades, large supplies always being on hand. Made in various thicknesses or specially moulded to order.

MAXIMUM DAYLIGHT GLASS AND CAT'S EYE FIGURED ROLLED GLASS (The Maximum Light Window Glass Company, 28, Victoria-street, Westminster, S.W.).

A sheet form of glass distinguishable by means of vertical lenses on the exterior and at right-angles to prismatic ribs on the interior. Glass said to considerably increase the daylight in deep or dark rooms. Adopted by H.M. Office of Works, London County Council, etc. Cat's Eye Glass obscures the view without diminishing the light, and is specially applicable for partitions, borrowed lights, screens, etc.

WROTHAM RED TILES (Messrs. Thos. Pascall & Sons, High-street, South Norwood).

These are bricks and sand-faced tiles of excellent varied shades and colours.

FIDDIAN DISTRIBUTOR AND FILTER (Messrs. Birch, Killon, & Co., 20, Cooper-street, Manchester).

This is an automatic rotary distributor, which revolves round a circular filter claimed to effect even distribution in small doses over the whole surface of the filter without offensive spraying, no small holes to be choked, and the minimum of attendance required to keep the distributor in good working order.

AJAX PATENT LAVATORIES, BATHS, AND SINKS (The Ajax Sanitary Company, Ltd., 49, Stamford-hill, N.).

These fittings are designed and manufactured to overcome the dangers existing from concealed wastes and overflows, open to, and ventilating into, the house. The waste is open to view, and readily cleaned by hand, and there is an entire absence of concealed parts. Large stocks of all sizes and patterns are held in London and at works.

Messrs. Thursfield & Co. (28, Berners-street, W.) submitted a selection of electric light fittings, and The Teale Fireplace Company (28, Berners-street, W.) submitted a selection of fireplaces.

INVERTIBLE BALANCED WINDOW SASH (The Shuttleworth Patent Invertible Window Sash Company, Ltd., 57, Craven House, Kingsway, W.C.).

This is an invertible window sash, balanced by cords and sash weights, the front parts being depressable into the pulley stiles. The windows can be released and lowered into a horizontal position. Claimed to obviate outside window cleaning, and therefore risk of accidents, with a trifling excess of cost over the ordinary window sash.

THE PATENT "BURKONE" BARLESS FIRE (The Standard Range and Foundry Company, Ltd., 105-106, New Bond-street, W.).

The fire-container, being basin-shaped, causes the fuel steadily to fall towards the centre, and the iron cone in the centre forms a hot-air chamber, thus causing equality of burning throughout. Said to burn from six to twelve hours without attention or the addition of fuel.

The Well Fire Company, Ltd. (33, Dover-street, W.) submitted a selection of interior designs.

GLAZED BRICKS (Messrs. Stanley Brothers, Nuneaton).

A selection of glazed bricks made in all colours, and largely used in asylums, schools, hospitals, etc.

THE "QUEEN" PATENT COMBINED GAS AND COAL RANGE (Mr. Thos. Potterton, Cavendish Works, Balham, S.W.).

These ranges combine the advantages of gas and coal ranges in one fitment, the gas appliances not being interfered with by the coal fire. They are made in various sizes, prices and particulars of which can be had on application.

BRICKS AND TILES (The Daneshill Brick and Tile Works, Basingstoke, Hants).

These are hand-made red sand-faced bricks and tiles, comprising a large range of colours not assorted; standard sizes from 1 in. thick upwards.

MANU-MARBLE (The Manu-Marble Company, Ltd., Gloucester).

This material is a manufactured marble of similar chemical composition, claimed to have the effect of the most expensive marbles, granites, and mosaics, and also to compare with the latter on all such points as durability, hardness, strength, etc. It takes a polish similar to marble, and will be guaranteed to stand climatic changes.

MINERVA PAINT (Messrs. Pinchin, Johnson, & Co., Ltd., Minerva House, Bevis Marks, E.C.).

The Minerva standard colours used are intended as stainers for Minerva white, added to each in a definite proportion, so that any shade may be arrived at. The paints are finely ground by machinery and well amalgamated.

GRANITE SILICON PLASTER (The Granite Silicon Plaster Company, Ltd., 38, King's-road, St. Pancras, N.W.).

This is a plaster of excessive hardness and density, easy and plastic to use. Makers also of 2-in. solid partitions, consisting of a core of metal lathing held in position by vertical rods 15 in. apart. This partition is said to be as soundproof as a 4½-in. brick wall, and self-supporting. It is finished with a hard, even, smooth surface on both sides.

LEADED LIGHTS (Messrs. Campbell & Christmas, St. Oswald's Studios, West Brompton, S.W.).

Submitted designs in lead glazing.

WEBSTER SYSTEMS OF HEATING (The Atmospheric Steam Heating Company, 52, Gray's Inn-road, W.C.).

By this system steam at, or even below, the pressure of the atmosphere, it is claimed can be circulated to almost any distance. The system is in demand for the utilisation of exhaust steam, and offers a method for its effective use in institutions, factories, etc. It is often employed where no such steam is available for warming blocks at a central point for high buildings, for installations which present difficulties in the way of effective drainage for condensation.

THE "BECK" SYSTEM OF LOW-PRESSURE HOT-WATER HEATING.

This system consists of a rearrangement of the flow, return, and expansion pipe of a low-pressure hot-water apparatus, coupled with an automatic damper regulator, claimed to be both economical in working, also in space and in cost of erection. There are 800 or 900 installations in use on the Continent, to which reference can be given.

Re Grimsby Town Hall Competition.

A Report on this competition giving local information obtained by a visit to the site, useful for those preparing designs for the competition, can now be had from the Secretary, 24, Hart-street, Bloomsbury, W.C., at a charge to subscribers of 15s. and to non-subscribers 18s.

WESTMINSTER CITY COUNCIL.

AT the fortnightly sitting of the Westminster City Council on Thursday last week, the following matters were dealt with:—

Water Charges.—It was agreed to express sympathy with the views of the Camberwell Borough Council in their objection to the scale of charges of the Metropolitan Water Board in respect of public conveniences, town halls, public offices, and public libraries.

Parker-street Improvement.—A letter was received from Messrs. Drivers, Jones, & Co. with reference to the conditions imposed by the Council with regard to the Parker-street improvement scheme. With reference to the condition that a strip of land in front of the Methodist Hall in Princes-street should be thrown into the public highway, they reported that this land did not belong to their clients. They also considered the condition that the proposed new street at its junction with Princes-street should be rounded off to a radius of 40 ft. was unnecessary, and would undoubtedly spoil the laying out of the corner block of buildings. The last condition, that general rates on existing assessments be paid by the applicants during demolition and construction until the new premises proposed to be erected on the site are brought into rating, they state is unusual, and could not be entertained for a moment.—It was decided not to modify the conditions.

A letter was also received from Mr. A. Murray Smith, of 40, Queen Anne's-gate, forwarded by the Local Government Board, who asked if the Board had power to make owners of working-class dwellings provide accommodation for their tenants when they received notice to quit, and stating that in Parker-street eighty families had received notice to quit from the landlord, Sir Robert Perks.—It was agreed to inform the Local Government Board of the action the Council had taken with regard to the improvement.

Suggested Site for Fire-station.—A letter was received from the solicitors suggesting that the Council might desire to purchase 667, Berwick-street, Soho, and it was decided to draw the attention of the County Council to the opportunity afforded for acquiring a site for a fire brigade station there.

Regent-street Improvement.—The Improvements Committee reported having received and considered several communications from the Office of Woods to the effect that it will shortly be necessary to settle definitely designs for the rebuilding of Crown property in various parts of Regent-street, and as a result of their negotiations and consideration they felt that the City Council should abandon any suggestion of dealing with the openings into Regent-street at Foubert's-place, Chapel-court, Regent's-place, and Heddon-street. They were however, favourably inclined to a suggested widening of Argyll-place at its junction with Regent-street, as likely in the future to lead to the development of Great Marlborough-street into an alternative thoroughfare to Oxford-street, between Bond-street and Soho. They accordingly instructed the Valuation Surveyor to negotiate with the Crown authorities with a view to their being in a position to recommend to the Council the purchase from the Crown of a strip of land on the south side of Argyll-place sufficient to widen that street to 60 ft., the said land to be transferred, free of leasehold or trade interests, whenever the existing buildings shall have been pulled down. They had now ascertained from the Crown Surveyor the sum required for the strip of land (1,100 ft. super.) in question. The value placed upon the land made it impossible for them to advise the City Council to undertake this improvement, even in conjunction with the London County Council, unless H.M. Commissioners of Woods, etc., could see their way to make a large deduction therefrom, in view of the enhanced value of the Crown property remaining, and also because the improvement of one of the finest streets in London may fairly be considered a matter of paramount public interest.—It was decided to communicate with the Office of H.M. Woods and Forests and the London County Council to this effect.

THE ROAD CONFERENCE.—Our report of this conference, which was convened by the County Councils Association, and held in London last week, is unavoidably held over until next week.

DECEASED ARCHITECTS' ESTATES.—The late Mr. Alfred Henry Paget, F.R.I.B.A., M.A.Oxon., who died on March 14, aged 61 years, and was a partner in the firm of Messrs. Goddard, Paget, & Catlow, of Leicester, has left estate valued at 19,873*l.* gross with net personalty of 19,597*l.*—The estate of the late Mr. Edward Augustus Lyle Ould, F.R.I.B.A., who died on January 31, aged 56 years, and was a member of the firm of Messrs. Grayson & Ould, of Liverpool, amounts to 24,038*l.* gross value, with net personalty 23,733*l.*

THE SURVEYORS' INSTITUTION.—The Council have decided that after the election of members to be held in October, 1913, no examination candidate shall be eligible for election as a Professional Associate unless he has passed both the Intermediate and Final examinations of the Institution. As a consequence of this change, after the present year candidates for the Intermediate Examination will be allowed to sit at the age of nineteen, and for the Final Examination on completing their twenty-first year.

THE BUILDER

MAY 8, 1909.

TO CORRESPONDENTS.

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All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

The responsibility of signed articles, letters, and papers read at meetings rests, of course, with the authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, photographs, manuscripts, or other documents, or for models or samples, sent to or left at this office, unless he has specially asked for them.

All drawings sent to or left at this office for consideration should bear the owner's name and address on either the face or back of the drawing. Delay and inconvenience may result from inattention to this.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

N.B.—Illustrations of the First Premiated Design in any important architectural competition will always be accepted for publication by the Editor, whether they have been formally asked for or not.

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"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the prepaid rate of 19s. per annum, with delivery *by Friday Morning's Post* in London and its suburbs.

To Canada, post-free, 21s. 8d. per annum; and to all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, etc., 26s. per annum.

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MEETINGS.

SATURDAY, MAY 8.

Junior Institution of Engineers.—Visit to Honor Oak Reservoir of the Metropolitan Water Board. 3 p.m.

Northern Architectural Association.—Visit to Bolbec Hall, Newcastle-on-Tyne.

MONDAY, MAY 10.

Surveyors' Institution.—Mr. A. B. Howes on "Quantity Surveyors: a Review of Their Legal Position." 8 p.m.

The Clerks of Works' Association (Carpenters' Hall, London-wall).—Paper by Mr. G. C. Workman (Edmond Coignet, Ltd.), on "The Construction of Works in Armoured Concrete." 8.15 p.m.

TUESDAY, MAY 11.

Royal Sanitary Institute.—Annual dinner of the Institute, to be held at the Langham Hotel. 7 p.m.

WEDNESDAY, MAY 12.

The Architectural Association.—Members' dinner, at the Georgian Hall, Gaiety Restaurant, Strand. 7 p.m.

The Royal Sanitary Institute.—A sessional meeting, to be held in the Parkes Museum, when a discussion will take place on "The Passage of Excreta through House Drains," to be opened by Mr. H. A. Roechling, M.Inst.C.E., F.G.S. The chair will be taken at 8 p.m. by Mr. H. D. Searles Wood, F.R.I.B.A. (Chairman of the Council of the Institute). 8 p.m.

Junior Institution of Engineers (at Royal United Service Institution, Whitehall).—Paper on "The Construction of Coin Freed Mechanism as Applied to Gas Meters," by Mr. Thos. S. F. Gibson, Assoc.M.Inst.C.E. 7.30 p.m.

THURSDAY, MAY 13.

Society of Architects.—Mr. G. Topham Forrest on "Secondary Day Schools, their Planning and Equipment." 8 p.m.

Institution of Electrical Engineers (Society of Arts, John-street, Adelphi, W.C.).—"Economics of Medium-Sized Power Stations: A Study of Comparisons between Steam, Gas, and Oil Engines," by Mr. A. J. J. Pfeiffer. 8 p.m.

SATURDAY, MAY 15.

Edinburgh Architectural Association.—Visit to Borthwick Castle and Borthwick Church.

Junior Institution of Engineers.—Visit to British Thomson Houston Company's Works at Rugby and the Works of the Rugby Gas Company.

Architectural Association.—First summer visit, to Maidenhead.

Incorporated Association of Municipal and County Engineers.—Yorkshire District Meeting, Doncaster. Discussion on the following paper, which will be taken as read:—"Notes on Doncaster and some of its Municipal Works," by Mr. F. Oscar Kirby, A.M.Inst.C.E., Borough Surveyor and Water Engineer.

Fifty Years Ago.

FROM THE *Builder* OF MAY 7, 1859.

MANAGEMENT OF COMPETITIONS.

THE mismanagement of competitions has so often been treated by cleverer persons than myself, that I scarcely like bringing forward any new projects; but still something ought to be done, and I cannot help thinking that most architects throughout the kingdom would not mind paying a voluntary tax, which, with so many architects as there are at the present day, could not come to much, and appointing, say two or three referring architects, in London, at a fixed salary, and that all competition drawings shall be submitted to them for their decision. If the plan seemed likely to be of avail, a committee might be formed, and something arranged; and then let advertisements be put in all provincial papers, refusing to compete in future for any works without the final decision be given by these referring architects. In my opinion it would effectually stop competition for paltry works, and for others we should know the plans would have their fair chance, which at present they have not; for, putting aside the supposition of any unfairness on the part of the committee, how is it possible for those who know nothing of architectural drawings to judge of their respective merits or demerits?

ARTHUR WILSON.

*** Mr. Wilson's letter shows how strongly the disadvantage of having competitions judged by incompetent persons was felt, long before any systematic steps were taken to put an end to it. The letter anticipates, in a sense, the present demand (not always complied with) for the appointment of professional assessors. His special suggestion might still be worth consideration.—ED.

COMPETITION FOR A DESIGN FOR A FOUNTAIN.

HAVING invited the younger members of the architectural profession, some six months ago, to draw out their ideas for the treatment of a façade in ferro-concrete, with what we think may be considered a very satisfactory result (we observe that two of the designs submitted are hung at the Royal Academy), we propose now to invite them to compete in a more purely artistic subject—viz., a design for a fountain for a public square or garden.

The terms of the competition will be formally announced in our advertising columns, under the usual head of "Competitions," in our next issue (May 15), and the same issue will contain the full instructions to competitors, which will be given by that means, in place of sending out a printed circular to competitors by post.

Illustrations.

DESIGN FOR GLAMORGAN COUNTY HALL.

THIS drawing shows a slightly-modified version of the competition design, owing to the accepted fact that no buildings are to be erected on the adjoining land, as I had expected.

The plan will explain itself, the separate block at the end of the main court being the Chief Constable's department, which was to be built later. The two low wings, on either side of this, contain the motor garage and the Chief Constable's stabling; my main idea being to plan the building in an open manner, avoiding all well-holes, so that all the windows will provide light and air.

All rooms lit from the front colonnade are lit also from the back, all these rooms being high. A. GILBERT SCOTT.

ELECTRICAL LABORATORY, OXFORD.

THE Electrical Laboratory now being built in the Parks at Oxford is a gift to the University from the Company of Drapers, who some years ago also presented the University with the new Radcliffe Library.

Their new gift, like their former one, is being carried out from Mr. Jackson's designs.

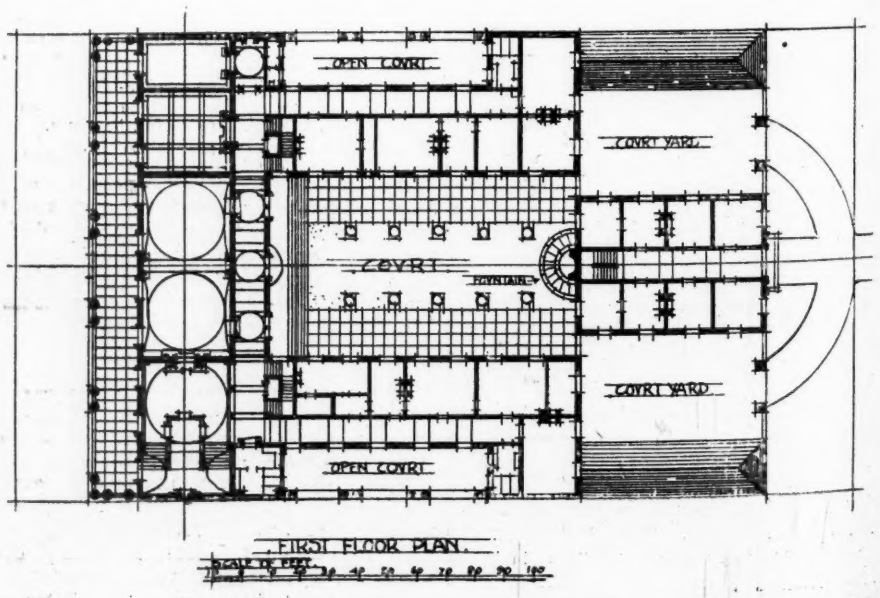
It is of stone up to the first floor and brick above, and contains, besides a spacious lecture-theatre, laboratories, research rooms, workshops, and classrooms, of which one occupies the whole length of the north front on the second floor.

The contractors are Messrs. Parnell, of Rugby, for the fabric, and Messrs. Haden & Sons for the heating, ventilation, and hot-water service.

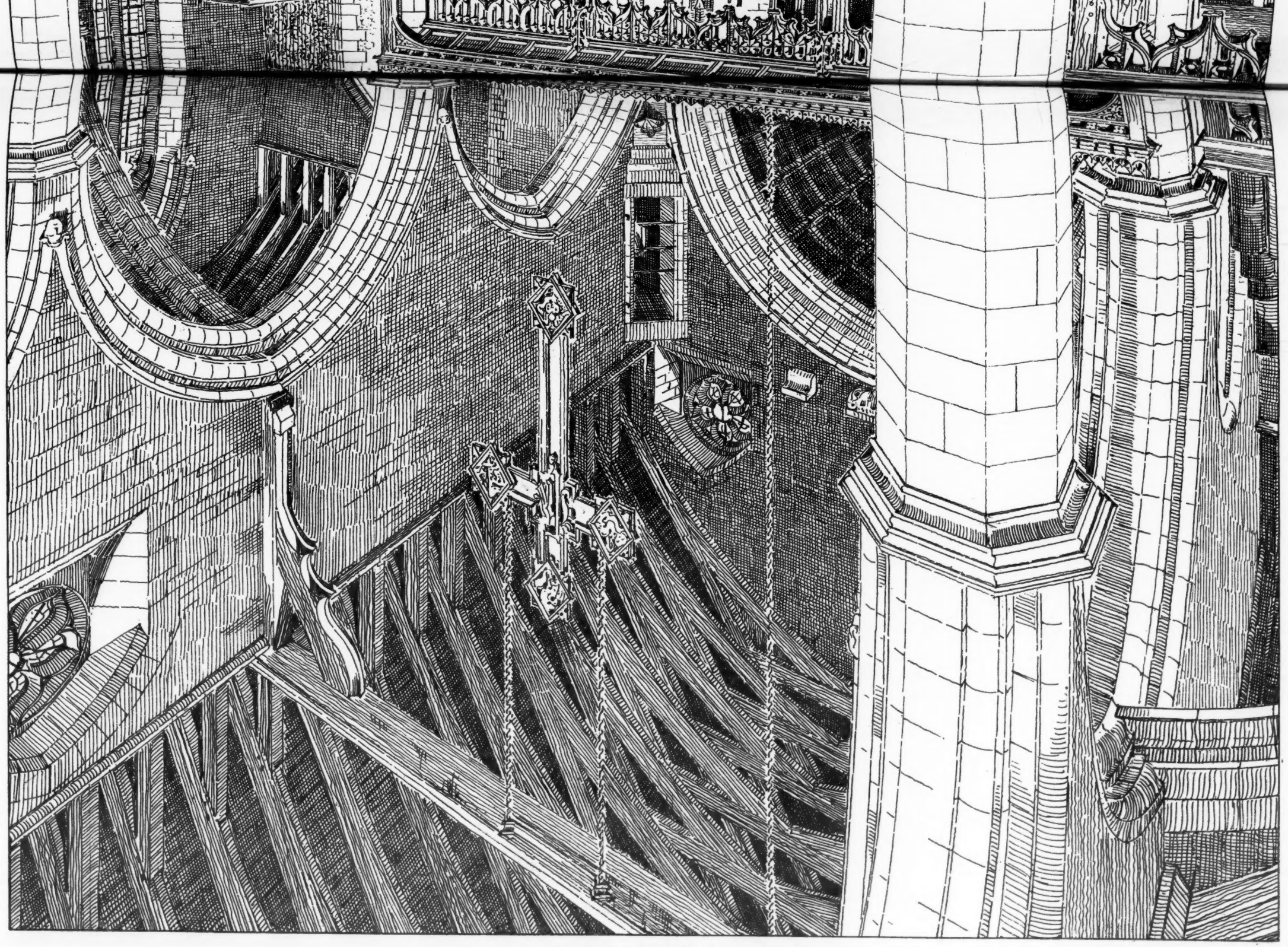
The carving will be executed from the architect's design by Messrs. Farmer & Brindley.

PEMBRIDGE CHURCH, HEREFORDSHIRE.

THE work of repair at this interesting church, just completed, has included (1) the opening-up and thorough repair of the roofs of the nave, aisles, and transepts (the timber-work having been covered by plaster ceilings and much decayed owing to damp), with oak boarding placed behind the rafters, the tie-beams which had been cut away replaced, and the old stone slates re-laid; (2) the removal of all the modern floors, the recovery of the old levels, and the replacing of the



Design for Glamorgan County Hall.



THE BUILDER, MAY 8, 1909.

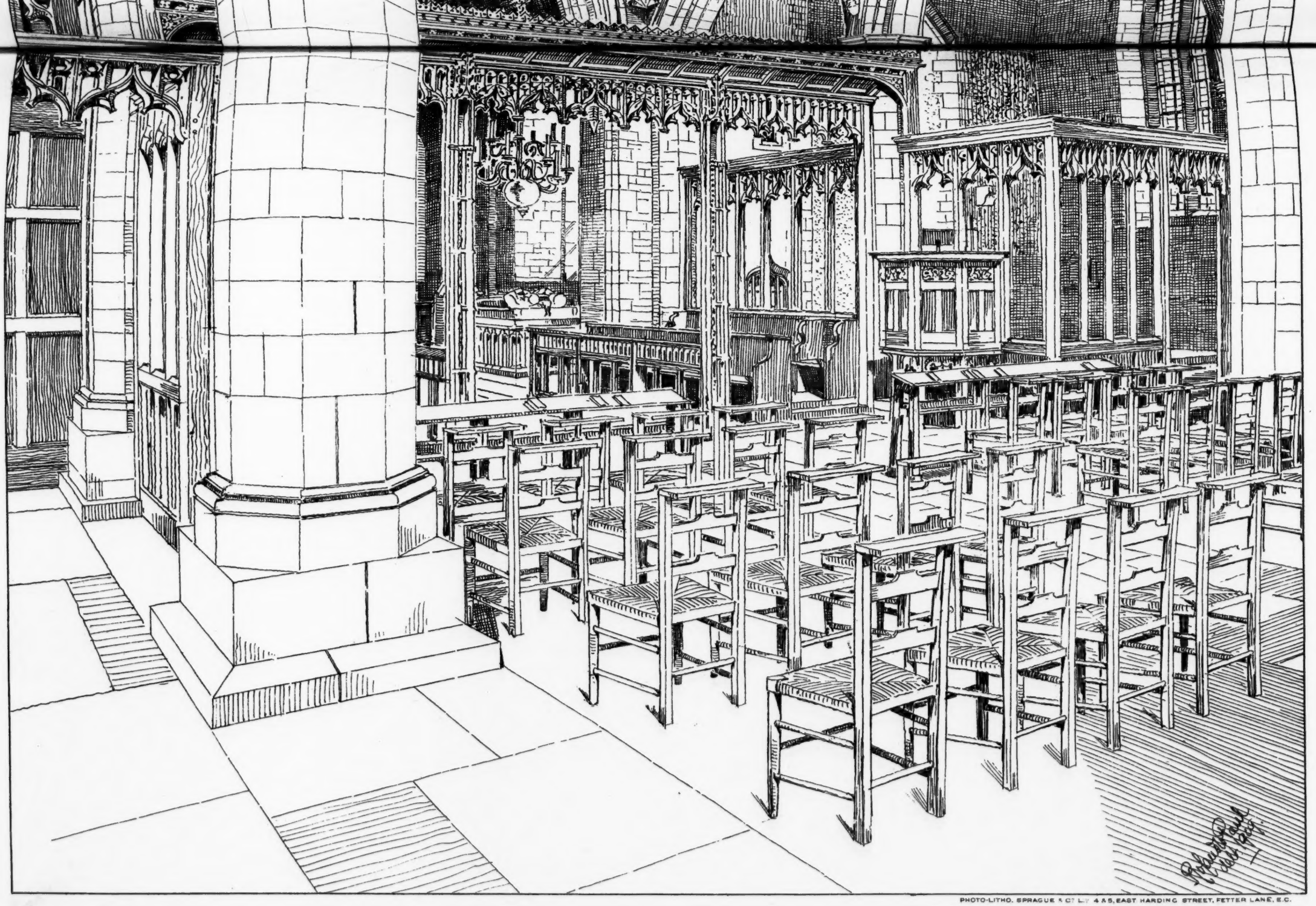
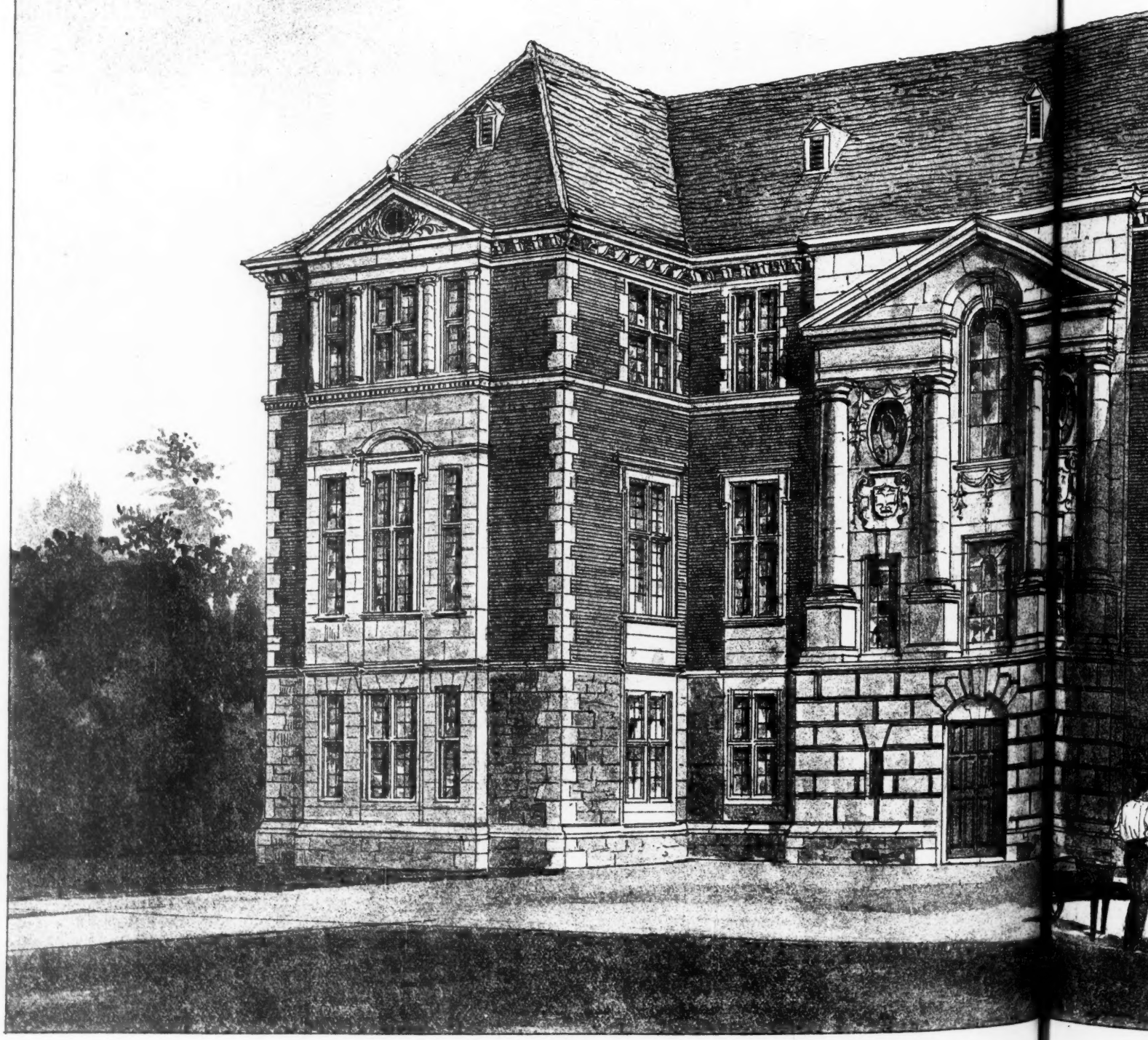


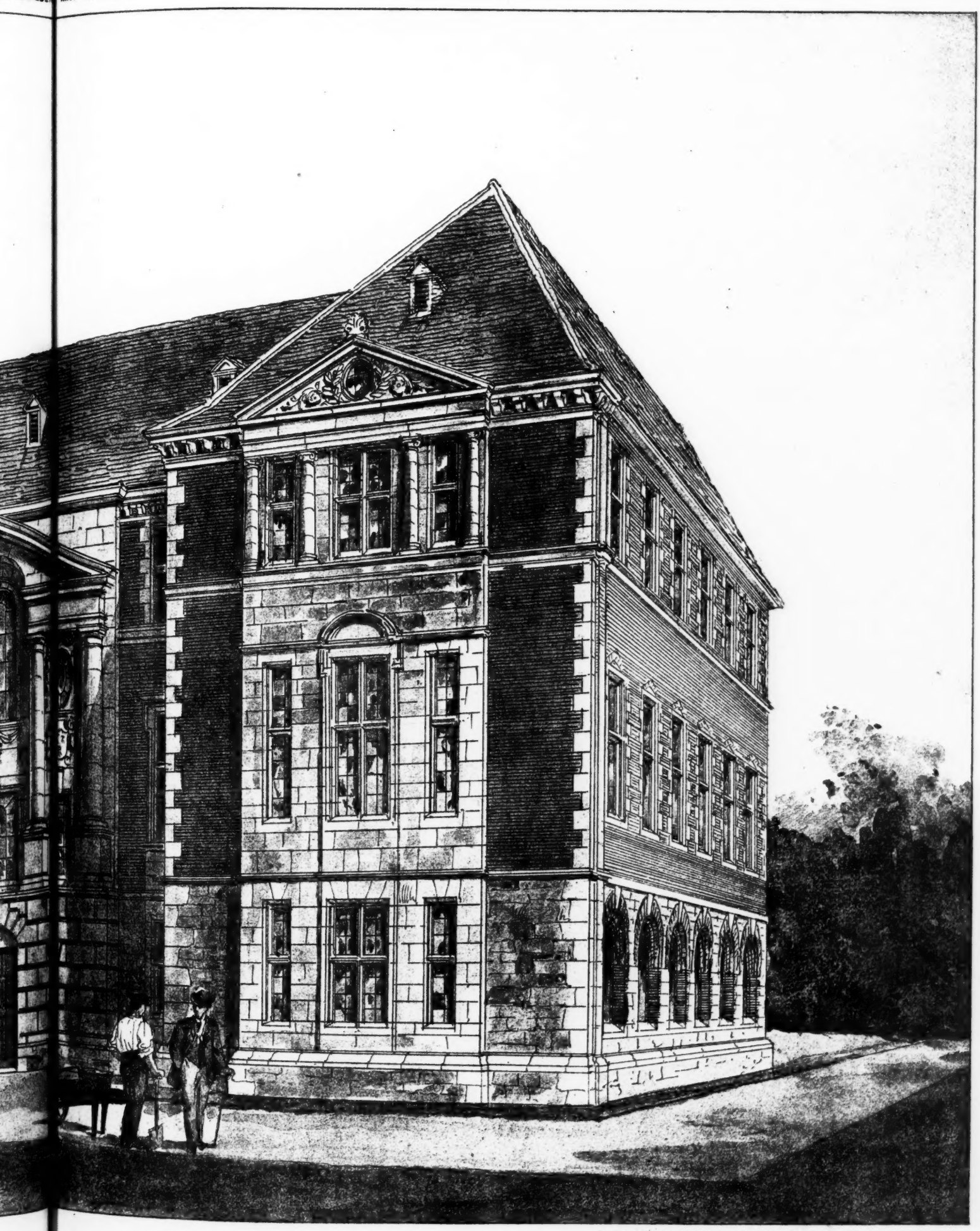
PHOTO-LITHO. SPRAGUE & CO. LTD. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

PEMBRIDGE CHURCH, HEREFORDSHIRE: INTERIOR AFTER RESTORATION.—Mr. Roland W. Paul, Architect

ELECTRICAL LABORATORY.
OXFORD.

Mr T G. JACKSON, R.A. ARCHITECT.





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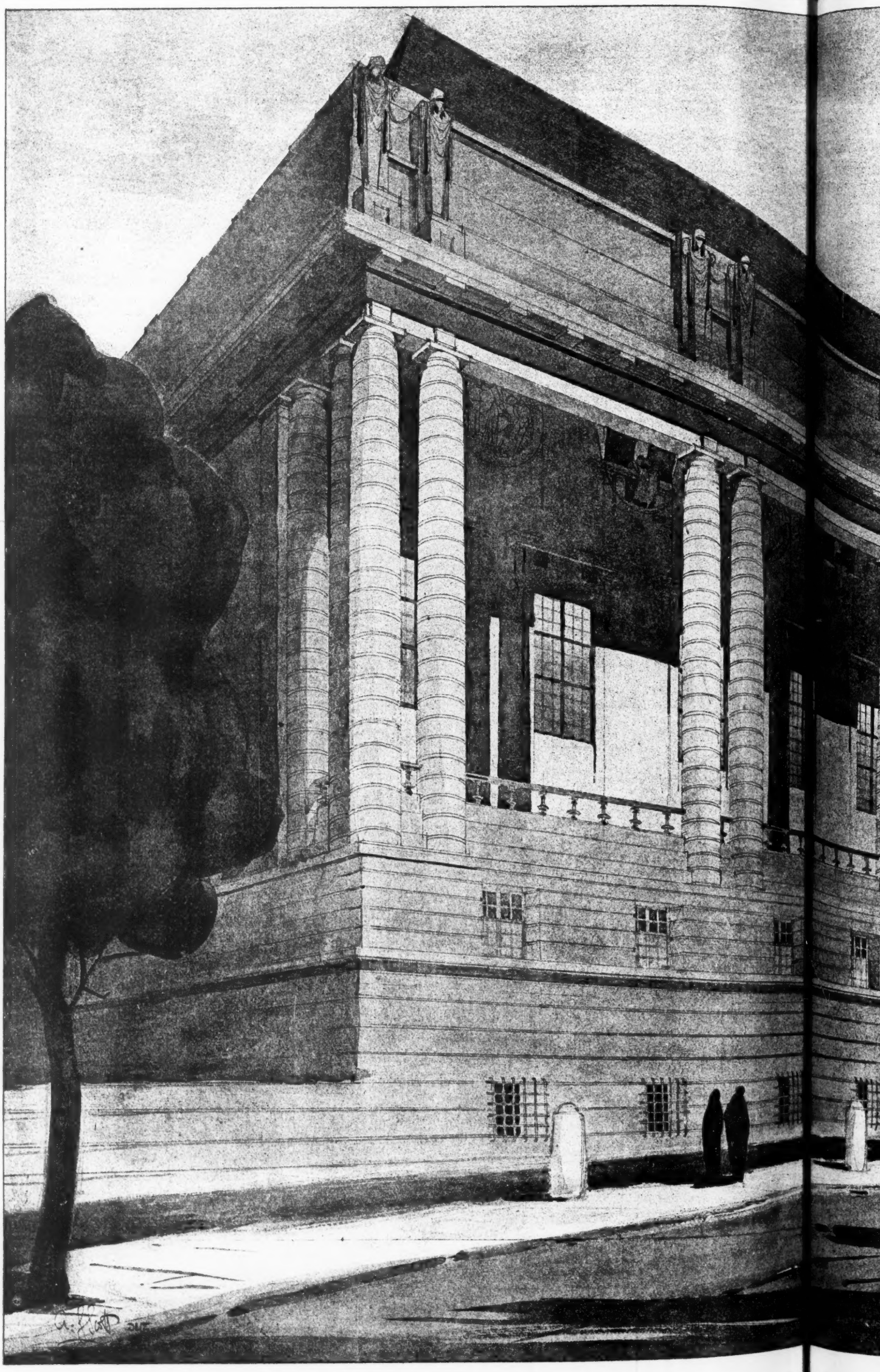
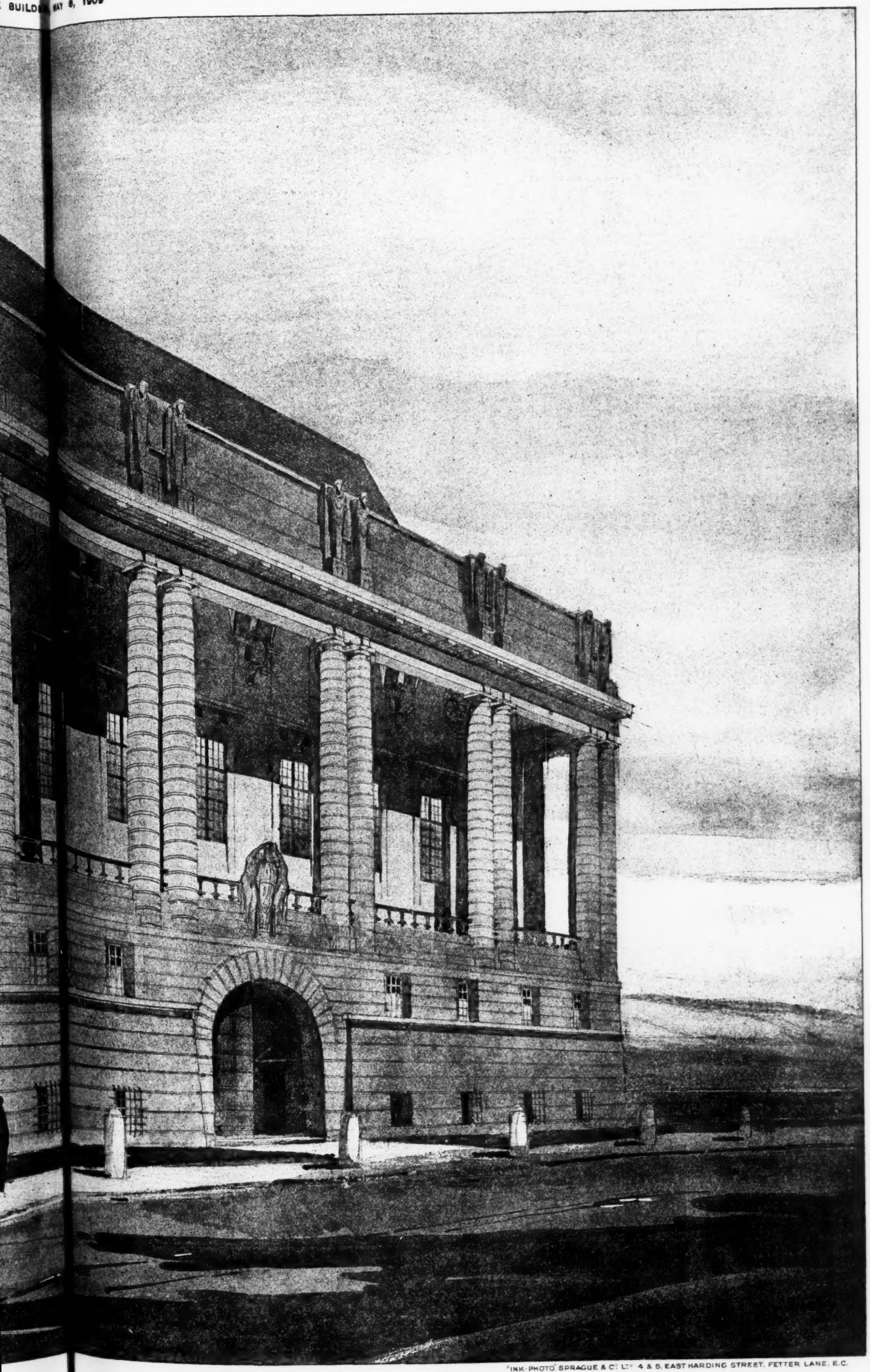


DESIGN FOR GLAMORGAN COUNTY HALL.—By



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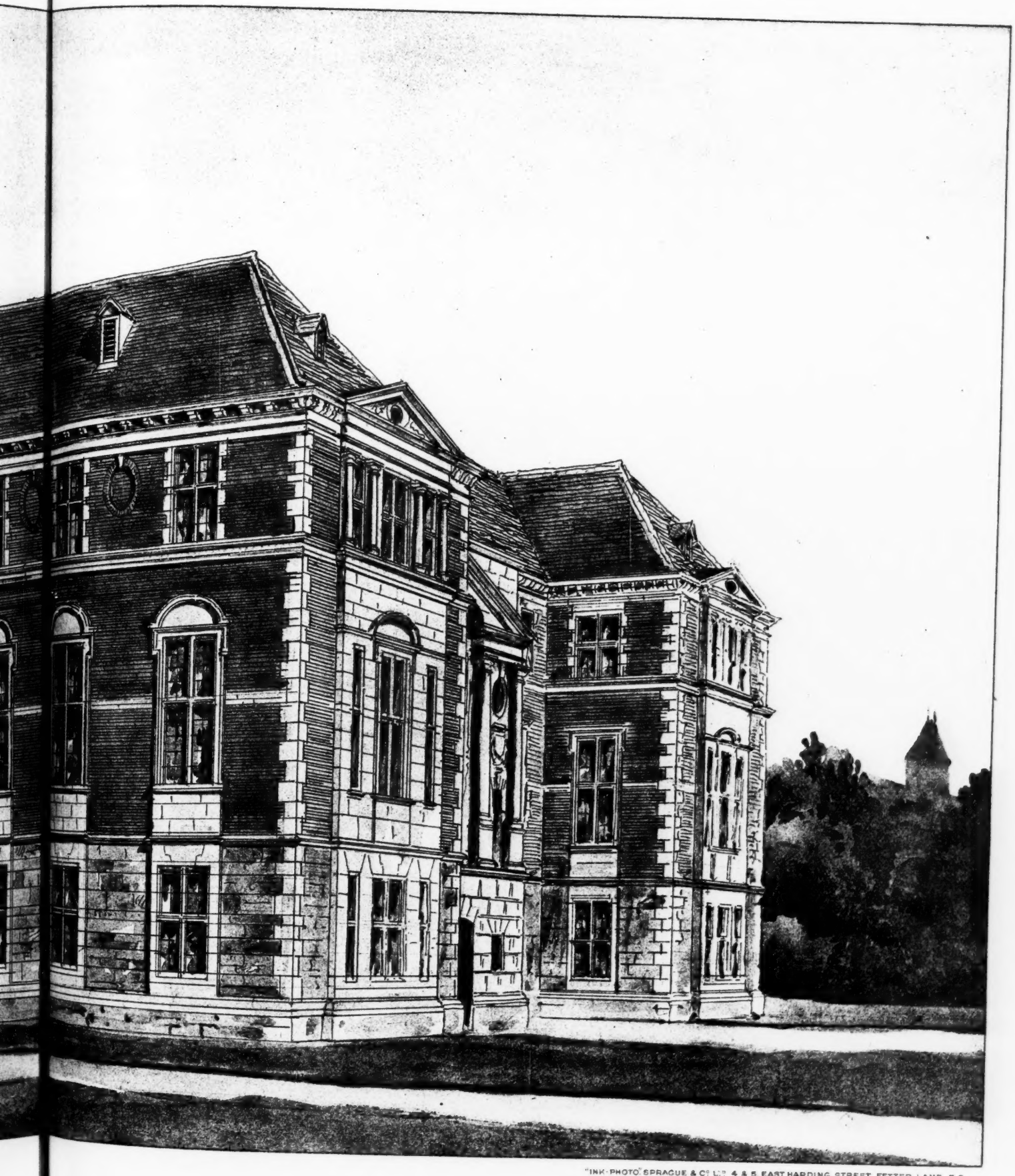
ORGAN COUNTY HALL.—By Mr. A. Gilbert Scott.

ELECTRICAL LABORATORY.
OXFORD.
Mr T. G. JACKSON R.A. ARCHITECT.



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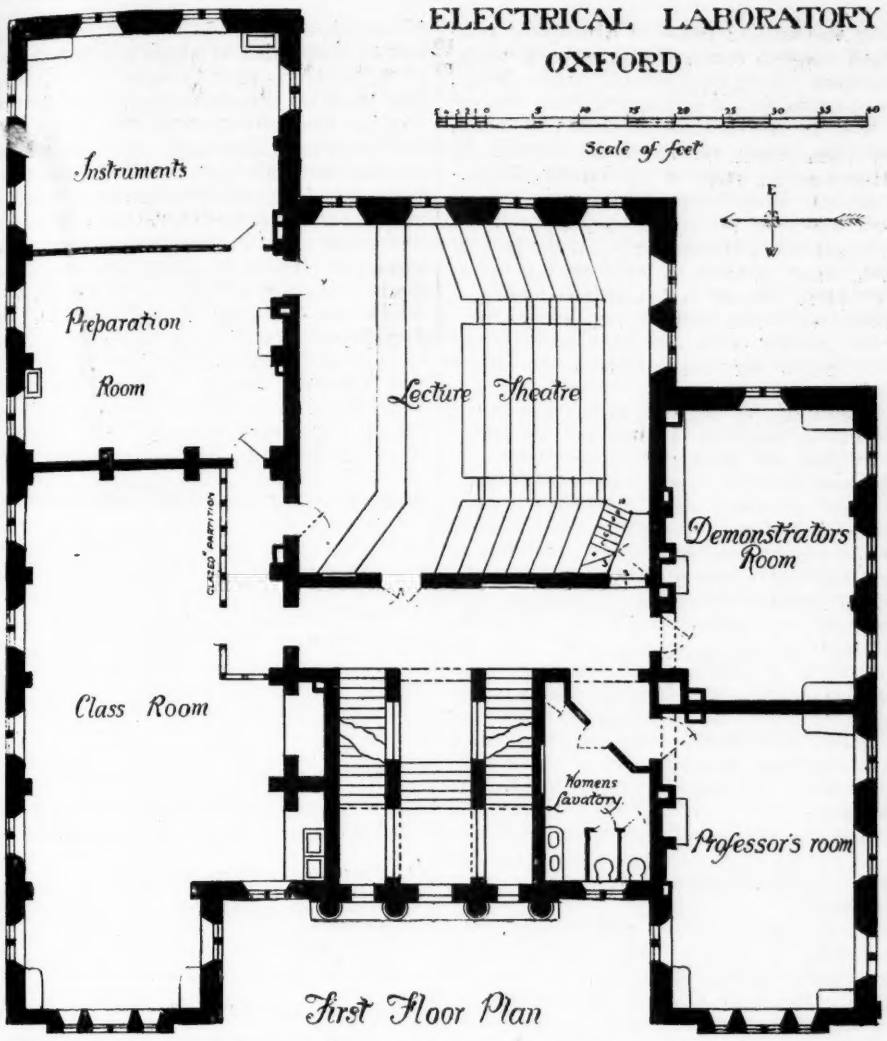


gravestones and monumental effigies in the chancel in their old positions, the opening of the roodloft stairs, and repairs to the fabric generally; (3) the provision of a heating chamber and apparatus under the existing vestry. The church no doubt formerly possessed elaborate screenwork and fittings; a few joists under the modern floors proved to be delicately moulded and painted, probably part of the roodloft. These and some panelling in the chancel are all that now remain, but they will form some guide for any new work that may be introduced in the future. The drawing of the interior, now in the Royal Academy, shows the view across the nave and south transept and the proposed screens, etc., to inclose the choir and transepts. The work of repair has been carried out by Mr. Henry Smith, of Wolverley, Kidderminster; the heating-apparatus by Mr. Sparkes (Mr. Houlton), of Great Malvern; the whole under the direction of the architect, Mr. Roland W. Paul, F.S.A., of London and Clifton.

THE QUANTITY SURVEYORS' ASSOCIATION.

AN ordinary general meeting of this Association was held on Wednesday, April 28, in the "Chinese Salon" of the Holborn Restaurant, Mr. Arnold E. Harris, J.P., F.S.I., President, in the Chair.

The minutes of the annual general meeting of May 23, 1908, were read and approved, and a list of names whom the Council nominates for election was read. Messrs. H. C. W. Dod, C. A. Kennett, and C. R. Newborn were elected to act as scrutineers for the ensuing Council elections.

Reinforced Concrete.

Mr. Moritz Kahn (The Trussed Concrete Steel Company, Ltd.) then read a paper on "Reinforced Concrete, Design, Quantities, and Practice." He said the reinforced concrete, when cast as a monolith, was more rigid than steel, and its strength in this respect partly accounted for the economy effected by its use. One need no longer doubt the strength of this type of construction, for in the hands of capable designers it was just as safe as structural steel work, with the additional advantage that its strength continually increased with age.

In all important structures, and in all buildings where steel framing might be used, reinforced concrete would prove an economical structural material. In this country, however, there were many places where it would be of no advantage whatever to have a steel or concrete frame building, so far as the external walls were concerned, on account of the thickness of the walls required by the Building By-laws. If the external walls of the building were to be built in a structural frame, the filling-in should be made of thin panels, and where reinforced concrete was used these panels need not be more than 5 in. thick. If, on the other hand, brick panels were used, a 9-in. thickness would generally suffice. He was inclined to recommend the use of brick panels 9 in. thick in preference to reinforced concrete panels, as the brickwork would come out cheaper and have a better appearance than concrete work. It was erroneous to say that reinforced concrete would always prove the cheapest method of construction. There were instances where it was not so cheap, and engineers soon recognised such cases. Middle-aged and small residential buildings, small manufacturing buildings, and the ordinary one-story type of building would show very little saving when reinforced concrete was used in their construction. A low retaining wall 6 ft. high would be cheaper in brick than in reinforced concrete, inasmuch as it would require a comparatively thin brick wall to withstand the strain; but a retaining wall over 10 ft. high could easily be constructed in reinforced concrete cheaper than in brick. Isolated girders and roof trusses high in the air would invariably prove cheaper in steel than in reinforced concrete; but a steel structure, after having been built, would always require a certain amount of upkeep, and the maintenance charges thus entailed would have considerable influence on the total cost. Though the material under discussion might not always be the cheapest in first cost, it was generally the most economical when all things were taken into consideration, such as the additional safeguard against fires, with a corresponding efficiency in one's plant, the saving in fire insurance premiums, and the reduction in maintenance charges.

In the selection of materials the question was often asked whether preference should be given to crushed stone or ballast. Engineers were wont to object to the use of the latter, on the ground that the surfaces were generally round and too smooth. It had often been demonstrated that round, smooth ballast gave just as strong a concrete as crushed stone. This statement might be qualified by the fact that in the early stages, say, at the end of two weeks, crushed stone concrete would be found to be a little stronger than ballast concrete, but at the end of thirty days ballast conerete was just as strong as stone concrete, and from that time on its strength began to surpass it. Ballast was often considered unsatisfactory as a fire-resisting material. At a fire test made recently it was found that ballast concrete would not stand the ordeal; but the ballast used in that test was uncrushed, and portions of it were of considerable size. Large stones when heated to a certain temperature would burst, owing to the internal strains exerted therein, but small stones heated to the same degree would not disintegrate. If the ballast used in that test had either been crushed or screened to pass a ¾-in. mesh, the floor slab in question would have successfully withstood the test. A similar test was made by him for the New York City Fire Department in 1904, using crushed ballast concrete, with satisfactory results. With reference to the sand employed, some engineers specified that it should be sharp and coarse. It was, however, very probable that these conditions would soon be eliminated. It had been recently proved that a moderately fine sand would give a stronger concrete than sharp, coarse sand. In the selection of this material, however, it was necessary to discover whether it contained chemicals deleterious to the cement. Sand taken from beds in contact with impure water killed the action of the cement, and should be condemned. Pit or bank sand was a very satisfactory kind to use. The cement should be of the very best grade, and should be subjected to repeated mechanical tests during the progress of the work. In this respect English cements were probably the best in the world. The handling and mixing of concrete was a feature which, to a great extent, governed its cost. Many engineers objected to the use of machine mixers. The use of a good batch machine mixer was, nevertheless, advisable on every large construction. When the concrete was mixed by hand it was turned from six to eight times, but a machine mixer turned it at least twenty times in a much shorter period and at a considerable saving in expense. In truth, a good machine mixer should actually be specified, provided the size of the construction and amount of concrete to be mixed warranted the expense of installing such a plant. In general, it would be found that in all constructions involving a quantity less than 400 or 500 cube yds. the concrete would be more economically mixed by hand than by machine, but in larger constructions the reverse was true.

The lecturer then showed and described various lantern views in illustration of his remarks. A mechanical mixing plant of the kind illustrated was installed at a cost of less than 800*l*. It mixed and placed 125 cube yds. of concrete per day at a cost of 9d. per cube yard.

Proceeding, he said that, since the Royal Institute of British Architects thought that reinforced concrete, as a structural material,

was of sufficient importance to devote to it the attention and research of a special committee, which committee summarised the general principles for designing reinforced concrete, and published formulæ recommended by them, there was no necessity for him to burden his paper with any mathematical problems. Empirical formulæ should not now be used, for sufficient progress had been made in scientific research to establish definite results, and though various authors who did not employ empirical formulæ differed widely in their methods of calculation, it would be found that there was very little difference in the result, no matter what method was used. The theory and calculations adopted by him were practicably the same as those adopted by the committee appointed by the Royal Institute of British Architects. However, in using these formulæ it must be borne in mind that no method of designing beams, based only on the calculations of the bending strain, could be correct. Such a design assumed that the concrete would, within itself, resist all the shearing strains, and all internal tensile strains resulting therefrom. That concrete was incapable of doing this was now generally recognised, and in proper designing provision was made for overcoming all internal strains, whether they occurred at the end of a beam, in the web, or at the centre of the beam in the bottom flange. In a beam uniformly loaded the maximum tensile strain on the steel would occur at the centre of the span, where the bending moment was greatest. At the same time, the maximum shearing strains on such a beam would occur near the points of support. The ultimate resisting value for concrete to shear was about 300 lb. per square inch, and if the total shearing strain on any plane exceeded 300 times the area of that plane failure was bound to occur therein. Reinforcement could be adopted, which would embody small rods curving along the lines of principal tensile stress. A beam thus reinforced would be constructed with a minimum amount of material for the maximum strength, but such a system of reinforcement would necessitate the use of a multitude of small rods, the impracticability of handling of which was readily apparent. The next step in reinforcement would be to have a main tension member running horizontally in the beam, using auxiliary reinforcements, or arms, in the vertical plane to provide for the shearing stresses existing at the ends of the span. Such auxiliary members should be inclined so as to cross the planes of rupture at nearly right angles. An angle of 45 degrees seemed to be the desired one, for it would appear more logical to have auxiliary members crossing the planes of rupture at right angles, when they would prove more effective than if placed vertically. The concrete surrounding the reinforcement in a test conducted by the United States War College on a reinforced concrete floor slab was the first to fail and break away, leaving the steel bars exposed.

In a test to destruction, when loose shear members were used, the concrete would fail to transmit the strain in the stirrup to the main tension member, as there would be no concrete around the bars to perform this function. The result under test would be failure by shear, and in truth this was actually demonstrated at the testing laboratory of the French Government a couple of years ago. When a beam was loaded, internal stress arches would of necessity tend to carry the load towards the supports, and each arch should have some abutments to take care of its horizontal thrust. This result could only be obtained by having some rigid connexion between the shear reinforcement and main tension rod. In a beam where vertical shear members were used, and placed loosely around the bar, it will readily be seen that the shear reinforcement, in order to be effective should be rigidly secured to the bar, so that the arches would not tend to cause the members to slip along the tension rod. In a properly reinforced concrete beam, the three fundamental principles of reinforcement were—firstly, the concrete should be reinforced in a vertical as well as in a horizontal plane; secondly, that the shear reinforcement should be inclined at an angle of 45 degrees, in preference to being vertical; thirdly, that all shear members should be rigidly connected to the main tension member. At the present time many systems of reinforced concrete were employed in Great Britain, each of which had its advocates.

The author then briefly described the Hennebique, the Coignet, and the Kahn systems.

Proceeding, he said that in the selection of reinforcing material it was not necessary to go into the matter of shape or form of reinforcement. A round bar was as good as any deformed bar, providing proper provision was made for all internal strains. This statement must be true, as all the theory of reinforced concrete was based on the assumption that the tensile strain of the reinforcement was transmitted to it only by the adhesion of the concrete, and that by embedding a plain, round rod a certain distance within the concrete its full tensile strength could be developed. Otherwise, millions of pounds'-worth of structures, built on these assumptions, would fail to fulfil the conditions for which they were designed. For a considerable length of time mechanical bond bars were used to a great extent in the United States, but the use of such reinforcement was now being abandoned.

As to measurement and pricing, the quantities of a reinforced concrete construction should be taken out in considerable detail. The cost of concrete in different portions of the structure varied considerably, and it was, therefore, desirable to know the yardage of concrete separately in footings, foundations, walls, columns, beams, girders, decking slab, and so forth. The cost of centering varied in a similar manner. This should be measured up separately by the superficial area of the surface coming in contact with the concrete, namely for walls, columns, beams, girders, decking slab, and so forth. Thus walls were measured both sides, without deducting doors and windows, as it was usual to let the form work run straight across these, unless it was impossible on account of mouldings, in which case the framing of the opening would cost as much as the form work omitted. Columns and beams should be measured by their girth, and decking slab by the horizontal measurements. No deductions should be made for the loss of area by the intersection of beams and girders and small openings in the floor should not be deducted. Anything as large as an elevator or staircase opening was usually deducted. Extra labour involved in belt courses, moulding, cornices and so forth should be measured by the lineal foot, giving the girth of same. All special features of exterior treatment should be carefully noted. The steel work should be taken off in pounds and again the amounts used in the various constructions should be kept separately. One of the greatest sources of contention in reinforced concrete construction lay in the question of finish of the work, and, therefore, great care should be taken to specify the kind of finish required, and accurately to measure the surface area of the various kinds. If no particular finish was included in the contract for the reinforced concrete work, there should be a clause to the effect that all such work was to be left free from the centering. The upper surface of floors could either have a granolithic finish, screeded surface or surface left from the spade. If either of the first two was required, the yardage should be measured. There was, of course, no extra charge for leaving the floors with a spade finish. Reinforced concrete was economical when compared with other methods of fireproof construction, but the mistake should not be made that it was cheap. It was well known that the cost of materials and labour in different parts of the country vary to some degree, but it had been his experience that, in spite of the varying rates of wages and costs of material, the variations frequently offset each other, so that the unit cost obtained in any one place might, generally speaking, be used for any other locality. There were, of course, exceptions to every rule, and in certain instances careful investigations should be made of special conditions, as the result of which one must use his judgment in either increasing or decreasing the unit rates by certain percentages. For general guidance the following figures of costs were given which had been taken from actual constructions, and included a net profit of about 10 per cent. to the contractor:—

COST OF COMPLETE FIREPROOF BUILDINGS.

Kind of Building.	Cost of Job.	Unit Cost. Per Cubic Foot.	Per Square Foot.
	£	d.	s. d.
Offices and stores	36,239	6¾	8 0
Factory	2,555	5¾	7 0
Factory	7,966	6½	6 6
Garage	2,078	4½	5 0
Fire station	1,352	7½	9 0
Store house	28,351	4¾	4 6
Cold storage building	40,010	6	5 0
Highest	—	7¾	9 0
Lowest	—	4½	4 6
Average	—	5¾	6 5

UNIT COSTS OF CONCRETE PER CUBIC FOOT,
Taken from an average of nine constructions.

	s. d.
For footings and mass concrete	0 10
Walls below ground	1 0
Walls above ground level	1 2½
Columns	1 2½
Beams and girders	1 5
Flat slabs	1 3
Slabs between steel beams	1 1½

UNIT COSTS OF CENTERING PER YARD SUPER,
Taken from an average of nine constructions.

	s. d.
For footings and mass concrete	1 6
Walls below ground level	2 6
Walls above ground level	3 6
Columns	4 0
Beams and girders	4 6
Flat slabs	2 6
Slabs between steel beams	1 9

With reference to the steel reinforcement, the cost would vary with the type of reinforcement adopted in the construction. It was quite obvious that reinforcement which must be fabricated on the site of the construction was more costly in the handling than reinforcement which was delivered ready for immediate installation. By this was meant that such systems of reinforcement necessitating the forging and placing of a multitude of loose pieces would prove more expensive in the handling than systems of the unit type. For comparative purposes figures were secured from twenty-one constructions where the former system was used, and twenty-eight constructions wherein the latter system was used. The average cost of fabricating and handling the steel in the twenty-one constructions using the loose method was 2*l.* 10s. 6d. per ton. The average cost of the twenty-eight constructions using the unit method came to 15s. 6d. per ton. These costs should in all instances be added to the cost price of the steel when delivered to the job. Thus, in the former the price should be added to the cost of ordinary round rod sections, and in the latter to the cost of certain special or patented sections. His connexion with a specific form of reinforcement precluded him from going into further detail on this subject. The pricing of belt courses, cornices, mouldings, and surfaces requiring special treatment presented some difficulty. It was quite obvious that these would depend entirely upon the individual requirements of each detail, a question of judgment for the estimator, and, therefore, no definite prices could be given which could be depended upon.

The lecturer then showed some views of executed examples of reinforced concrete work.

Mr. H. T. A. Chidgey, in proposing a vote of thanks, said the difficulty was to determine which was the best of the various systems of reinforcement. For buildings which had to carry a heavy load and in which appearance was not an important point reinforced concrete was an important material, and probably a great deal could be done with it. He thought the lecturer's ideas of prices were rather excessive.

Mr. A. J. Gate seconded the vote of thanks, and said that he began practice forty years ago, and he thought he had learnt all about pricing, when this new material came along, and now he had to begin over again. Until quantity surveyors studied concrete construction they would not be able to help architects in the way they had done in the past.

Mr. A. T. Babbs, the Hon. Secretary of the Association in South Africa, said not much had been done in that country with reinforced concrete, and the materials available were rather against them. Some successful American steel-framed buildings had been erected, however.

Mr. S. A. Stanger said that nothing had been said about reinforced concrete piles. With reinforced concrete piles it might be possible to construct a bridge over a river without having anything like the expensive cofferdams used at present. As to the decoration of reinforced structures, it was a matter of regret that the building in Newgate-street was going to have a Portland stone front stuck on it, and that would not give any notion of the sort of construction of the building.

Mr. J. D. Watson (Birmingham) said that reinforced concrete required sound workmanship particularly. In the preparation of the concrete the chief desideration was to obtain a monolithic mass, and the concrete had to be proportioned well. In America and France, where considerable progress had been made with reinforced concrete, they had a climate that was not so damp as ours, and for that reason we ought to proceed with more or less caution; though he also thought we ought to obtain experience by our own works.

Mr. H. A. Addiscott said he did not agree with the lecturer as to his system of measurements. There was only one system of measurement, and that was strictly net. Openings should be deducted, and labours entailed in their formation should be reckoned. Was anything known about the demolition of reinforced concrete buildings? At present we had not had much to do with that, though we should have experience later on. A building could now be pulled down and the site cleared practically free of cost, but with reinforced concrete it might be an expensive item to pull down, for the credit for materials would be practically nil. Then as to alterations; even in a new building, alterations were soon necessary, and considerable difficulty might be experienced with reinforced concrete work in the event of alterations being required.

Mr. C. A. Kennett asked if it was advisable to put in the steel quite clean or with a slight rust upon it. Or should it be painted? And what was the oldest known building in reinforced concrete?

Mr. Watson said that some slabs with iron rods interlacing had been found in the roof of the frigidarium at the Caracalla baths. The Institution of Civil Engineers were about to institute an investigation in regard to reinforced concrete, and we were likely to get a sounder and more thorough investigation from them than from the newly-established Concrete Institute.

Mr. W. West and Mr. Elsmere Harris having spoken,

The Chairman then put the vote of thanks to the meeting, and it was heartily agreed to.

Mr. Kahn replied to the various points at some length. As to painting steel work in concrete, he said emphatically no. They were eliminating the fundamental principle of reinforced steel work when they did that. The theory was that the concrete binds with the steel, and if they painted the steel they got a sliding effect. That was with oil paint, for the result was quite different when the material was painted with cement. Steel work in reinforced concrete did not rust when it was coated with cement owing to the chemical action set up. As to measurements, reinforced concrete work was new, and new problems were presented, and a great deal depended on judgment. It was rather hard on the reinforced concrete contractor if they took out all little details, for it was difficult for him to price them, as he had had no experience. When the contractor saw that he was treated with fairness he made his price accordingly. Quantities for reinforced concrete should be taken out in the flat and not in detail. As to demolition, they presented some difficulties, for we build better than we knew. But reinforced concrete buildings could be altered much as structural steel buildings were altered, though the cost might be a little greater because of the hardness of the material.

THE LONDON COUNTY COUNCIL.

THE first meeting of the London County Council after the Easter recess was held on Tuesday in the County Hall, Spring-gardens, S.W., Sir M. Beachcroft, Chairman, presiding.

Loans.—Sanction was given to Camberwell Borough Council to borrowing 3,476*l.* for housing purposes, to Kensington Royal Borough Council 3,000*l.* for dust destructor, to Stepney Borough Council 482*l.* for street improvement, and to Southwark Borough Council 8,500*l.* for electric lighting. It was also agreed to lend the City of London Union Guardians 9,366*l.* for poor law purposes, Poplar Guardians 6,000*l.* for poor law purposes, and Shoreditch Borough Council 1,328*l.* for street improvement.

Completion of cottages on sect. C, Totterdown-fields estate.—A further instalment of sixty-seven cottages containing accommodation for 450 persons has been completed on sect. C of the Totterdown-fields estate, Tooting. In all, accommodation for 5,812 persons in 823 tenements, in addition to four shops, has now been provided on the estate.

Theatres, etc.—Applications relating to the following were agreed to:—

A drawing, submitted by the Bermondsey Metropolitan Borough Council, showing a proposal to construct an outside staircase to form a secondary means of escape from the gallery at the Bermondsey Town Hall, Spa-road, Bermondsey.

A drawing, submitted by Messrs. F. Matcham & Co., showing a proposal to enlarge the pit at the Camberwell Palace of Varieties, Denmark-hill, by the inclusion therein of the space at present occupied by the pit saloon.

Drawings, submitted by Mr. E. White, showing the internal arrangements of buildings Nos. 13, 14, 15, 19, 23, and 24, at the Imperial International Exhibition, Shepherd's Bush, and also drawings showing a proposal to provide new ceilings and ceiling lights to refreshment buildings Nos. 20, 27, and 38.

A drawing, submitted by Messrs. Slark, Edwards, & Co., showing the restaurant on the ground floor at the Inns of Court Hotel, High Holborn.

Drawings, submitted by Mr. W. West, showing a proposal to form a retiring-room at the King's Hall, New King's-road, Fulham.

A drawing, submitted by Mr. A. Ludski, showing the proposed arrangement of premises, situated at No. 105, Kingsland High-street, to be known as the Kingsland Palace of Animated Varieties, which are at present being converted into a cinematograph hall.

Drawings, submitted by Mr. A. O. Collard, showing the arrangements in connexion with the Deluge side show and the British Navy panorama to be produced in buildings Nos. 26 and 27, and in building No. 23, respectively, at the London Exhibitions Buildings, Earl's Court.

Drawings, submitted by Messrs. F. Matcham & Co., showing the provision of additional means of escape from the dressing rooms at the London Hippodrome, Charing Cross-road.

The County Hall.—Mr. Norman, in reply to a question, said the concrete rock foundation would be ready at the end of the year. The wall of the Embankment, however, would not be entirely completed then, but great progress would be made. At the end of the year a beginning would have been made with the first block of the County Hall, and this block would be completed in four years' time.

Greenwich-road Permanent Way Depôt: Construction of Embankment Wall.—The following recommendations were agreed to:—

(*a*) That further expenditure on capital account not exceeding 349*l.* be sanctioned in respect of the construction of a new embankment wall at the river frontage of the tramways permanent way depôt in Greenwich-road.

(*b*) That the seal of the Council be affixed to a contract with Messrs. Kirk & Randall for the execution, for a sum of 3,775*l.*, of the work referred to in the foregoing resolution (*a*).

(*c*) That the reasons given by Messrs. Thomas & Edge for the withdrawal of their tender in respect of the work referred to in the foregoing resolution (*a*) be regarded as satisfactory.

Victoria-embankment: Repaving and Repairs.—It was agreed that the offer of John Mowlem & Co., Ltd., to carry out the excavation work for the laying of 11,900 yds. of asphalt on the Victoria-embankment, at the price of 1s. 4d. a square yard, be accepted, and that the offer of the Trinidad Lake Asphalte Paving Company, Ltd., to lay about 1,400 sq. yds. of asphalt paving on the Victoria-embankment, at the rate of 9s. a square yard, be accepted.

Housing, Town Planning, etc., Bill.—The Parliamentary Committee recommended as follows:—

That amendments be sought in the Housing, Town Planning, etc., Bill, to provide—

(i.) That the local authority be afforded an opportunity of considering the modifications that may be made by the Local Government Board in a scheme under clause 2 in those cases where such modifications would impose additional liability on the local authority, and of withdrawing the scheme if it does not see its way to agree to the modifications.

(ii.) That all powers of the Local Government Board to compel the Council to carry out any of the powers or provisions of the Housing of the Working Classes Act, 1890, be deleted from clauses 10 and 11.

(iii.) That the provisions for exemption from by-laws under clause 22 (1) (2) be extended to cases under Part III. of the Housing Act, 1890, and that no exemption from the operation of the London Building Acts be granted without the concurrence of the Council.

(iv.) That clause 30 providing for a quinquennial survey and register of working-class dwellings do not apply to the County of London.

(v.) That clause 36 be amended so as to provide that working-class lodging-houses shall be exempt from inhabited house duty where the charge for lodging does not exceed 1s. per day per person.

(vi.) That all expenses incurred by the Council in carrying out Part I. (Housing) of the Bill shall be charged on the general county rate and not on the special county rate.

(vii.) That all powers of the Local Government Board to compel the Council to prepare or execute a town planning scheme be deleted from the Bill.

(viii.) That any question as to whether property is injuriously affected or increased in value to be determined under clause 57 be referred to an arbitrator to be appointed by the Local Government Board.

(ix.) That clause 8 of the first schedule to the Bill be amended by the deletion of the words "but shall not, except in such cases as the Board otherwise direct, hear counsel or expert witnesses."

(x.) That such modifications in matters of detail as in the opinion of the Parliamentary Committee may be desirable in the interests of the Council be authorised.

The consideration of the matter was adjourned.

Buildings and Engineering Works Bill, 1909.—The Parliamentary Committee reported as follows, the recommendations being agreed to:—

"We reported on March 9, 1909, that a deputation from the Council waited on Mr. Herbert Samuel, M.P., the Under Secretary of State for the Home Department, on February 16, 1909, in support of an instruction, as follows, on the Buildings and Engineering Works Bill:—'That an amendment of the Building Operations and Engineering Works Bill, 1908, be sought to provide that the work of inspection in the County of London under the Bill shall be carried out by the Home Office in lieu of the Council, or, that if the work of inspection be carried out by the Council, the expenses thereof shall either be reimbursed by His Majesty's Government, or met by fees to be paid by the builder or owner in the same manner as fees for supervision are now paid under the London Building Act, 1894.'

We stated that Mr. Samuel informed the deputation that he felt himself unable to consider any of the amendments referred to. Since the date mentioned our chairman has had, at the request of Mr. Samuel, an inter-

view with him with regard to the Bill. Mr. Samuel stated that the District Surveyors under the London Building Acts had seen him on the provisions of the Bill, and that they desired to have the duties proposed by the Bill imposed directly upon them by the Bill or by regulations to be made under the Bill; also to have their remuneration fixed by schedule to the Bill. Mr. Samuel asked (1) whether the Council desired that the suggestions of the District Surveyors should be given effect to, or whether the duties should be placed on the Council, the Council employing the District Surveyors; and (2) whether, if the Council employed the District Surveyors and any difficulty arose as to fees, the question at issue should be left to the determination of the Secretary of State without, however, incurring the expense of a formal arbitration.

We have been in communication with the Building Act Committee on the points raised by Mr. Samuel, and that Committee are of opinion as to (1) that it would be undesirable for the Council to have no power to control or supervise work in respect of which it would be required to pay fees, and further that the carrying out of the suggestion would seriously embarrass the Council in any negotiations as to the amount of remuneration to be given. With regard to (2) the Building Act Committee consider that the question of remuneration is one which should be left to the Council, having regard to the fact that the District Surveyors are, under the London Building Act, 1894, appointed and may be dismissed by the Council. We concur in the views thus expressed, and we recommend:—'That the Council is of opinion that the duty of carrying out the provisions of the Buildings and Engineering Works Bill, 1909, should be placed on the Council and not on the District Surveyors, under the London Building Act, 1894, and that the question of the remuneration for the work should be left to the Council; and that the Under Secretary of State for the Home Department be informed accordingly.'"

Smoke Nuisance.—The Public Control Committee recommended:—

That notice be given by public advertisement of the intention of the Council to consider, at its meeting on May 18, 1909, a proposal that it shall take the necessary measures for promoting in the session of Parliament of 1910 legislation relative to the prevention of nuisance from smoke in the County of London, and to defray out of the county fund the cost and expenses of so doing.

The recommendation was opposed, and the consideration of the matter was adjourned.

The Council adjourned soon after 8 o'clock.

APPLICATIONS UNDER THE LONDON BUILDING ACTS, 1894 to 1908.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Acts, 1894 to 1908. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Bermondsey.—Buildings on the site of Nos. 117, 118, 119, 120, 121, 122, 123, and 123A, Grange-road, Bermondsey (Messrs. G. Elkington & Son).—Consent.

Brixton.—An alteration to the bay windows at, and the erection of steps on the forecourt of, No. 121, Ferndale-road, Brixton (Mr. A. E. Waters for Mr. A. S. White).—Consent.

Deptford.—A library building between Nos. 114 and 120, New Cross-road, Deptford (Mr. J. Sutcliffe for the Deptford Metropolitan Borough Council).—Consent.

Finsbury, East.—The retention of two illuminated advertisement cases at the Old-street station of the City and South London Railway, Old-street and City-road, Finsbury (Mr. T. C. Jenkin for the City and South London Railway Company).—Consent.

Fulham.—Rebuilding of Nos. 482 and 484, Fulham-road, Fulham (Mr. G. A. Gale).—Consent.

Islington, South.—The retention of an illuminated advertisement case and wooden advertisement boards at the Angel Tube Railway Station, City-road, Islington (Mr. T. C. Jenkin for the City and South London Railway Company).—Consent.

Kensington, North.—Porches and bay windows to houses on both sides of Finstock-road, the eastern side of Wallingford-avenue, and the northern side of Oxford-gardens, Kensington, and to the erection of projections at the flanks of the buildings marked Nos. 1 and 2, Finstock-road, to abut upon Oxford-gardens, and at the flanks of the buildings marked Nos. 43 and 44, Finstock-road, to abut upon Kelfield-gardens (Messrs. Trant-Brown & Humphreys).—Consent.

Lewisham.—A porch to a house on the western side of Blagdon-road, Lewisham (Mr. J. A. West for Mr. O. Halstead).—Consent.

Lewisham.—Projecting porches and barge-boards to houses on both sides of Datchett-road, Perry-hill, Catford, and the erection of the buildings marked Nos. 40 and 42, Datchett-road, with an irregular open space at the rear (Mr. A. R. Westworth for Mr. A. Cooper).—Consent.

Marylebone, East.—The retention of a balcony and porch on the Berners-street frontage of an hotel building abutting upon the eastern side of Berners-street and the southern side of Castle-street, St. Marylebone (Mr. John Slater for Mrs. Clark).—Consent.

Peckham.—A one-story shop in front of No. 26, High-street, Peckham (Mr. G. F. Morgan).—Consent.

St. George, Hanover-square.—The retention of a projecting sign in front of No. 45, New Bond-street, St. George, Hanover-square (Messrs. G. & F. Kent).—Consent.

St. George, Hanover-square.—A sign and two lamps at No. 9, Grafton-street, St. George, Hanover-square (Messrs. Green & Abbott).—Consent.

St. George, Hanover-square.—Porches to buildings abutting upon Park-street, Upper Grosvenor-street, and King Street-mews, St. George, Hanover-square (Mr. W. D. Caröe).—Consent.

St. Pancras, West.—The retention of an illuminated sign at 292, Euston-road, St. Pancras (Mr. A. Monighetti).—Consent.

Strand.—The retention of an illuminated sign in front of No. 14, Hanover-court, Long-acre, Strand (Mr. J. P. Choate).—Consent.

Strand.—A projecting clock at No. 65, Charing-cross, Strand (Mr. H. G. Leslie for the Canadian Pacific Railway Company).—Consent.

Strand.—A sign in front of No. 137, Regent-street, Strand (Messrs. Hill & Harrington for the Cricklite Company).—Consent.

Strand.—A crane at Burlington-buildings, Heddon-street and Heddon-court, Regent-street (Messrs. J. S. Paul & Son).—Consent.

Strand.—A deviation from the plans approved for the erection of an iron and glass shelter in front of the Gambrinus Restaurant, Nos. 7 and 8, Rupert-street, Strand, so far as relates to (*a*) the placing of lettering on the front of and in the scrollwork of the brackets at each end of the shelter, and (*b*) the fixing of flambeaux at each end of the shelter (Messrs. Emden, Egan, & Co. for Mr. R. Baker).—Consent.

Wandsworth.—Five houses on the site of Brockwell House, on the eastern side of Norwood-road, Herne-hill, with porches and one-story bay windows (Messrs. May & Perrin).—Consent.

Wandsworth.—A mission-hall building on the eastern side of Mitcham-road, Tooting, to abut also upon the northern side of Longmead-road (Messrs. Gelder & Kitchen for the Trustees of the Tooting Wesleyan Mission).—Consent.

Westminster.—Retention of an illuminated sign at Caxton House, Tothill-street, Westminster (the London Sand Blast Decorative Glass Works, Limited).—Consent.

Woolwich.—Buildings on a site on the eastern side of Herbert-road, Woolwich, to abut also upon the southern side of Plumstead Common-road (Mr. J. Rush Dixon for the Woolwich Metropolitan Borough Council).—Consent.

Dulwich.—A house on the eastern side of Champion-hill, Dulwich (Mr. G. Le Morris for Mr. A. B. Faulkner).—Refused.

Fulham.—An addition to the Burlington Laundry on the south-eastern side of Rigault-road, Fulham (Mr. G. Roberts for Mr. Chubb).—Refused.

Hackney, South.—Buildings on the western side of Lower Clapton-road, Hackney (Mr. A. Gordon for Mr. W. Booth).—Refused.

Lewisham.—An addition to an existing verandah in front of No. 153, High-street, Lewisham (Mr. A. L. Guy for Mr. G. C. Smith).—Refused.

St. George, Hanover-square.—A one-story addition in front of Gloucester House, Piccadilly (Messrs. Colcut & Hamp for Mr. J. Duveen).—Refused.

St. Pancras, West.—Buildings on the sites of Nos. 202 to 214 (even numbers only) inclusive, Euston-road, St. Pancras (Mr. G. Vernon).—Refused.

Width of Way.

Bow and Bromley.—Building on the eastern side of Old Ford-road, Poplar (Mr. H. Heckford for the Poplar Metropolitan Borough Council).—Consent.

Bow and Bromley.—A one-story addition to Red House School, Love-lane, Bromley-by-Bow (Messrs. Holman & Goodrham for the Rev. E. Sinker, M.A.).—Consent.

Shoreditch.—Retention of a building on the northern side of Laburnum-street, Shoreditch, with a forecourt fence wall at less than the prescribed distance from the centre of the roadway of the street (Messrs. Dunnage & Hartman for Messrs. Bellingham & Co.).—Consent.

Width of Way, Frontage, and Projections.

City of London.—A projecting structure at the *Daily News* office, Nos. 19 to 22, Bouverie-street, City (Mr. B. F. Crosfield).—Consent.

Kensington, South.—The retention of a show-case in front of No. 179, Church-street, Kensington (Mr. F. W. Handover for Mr. A. Alfreds).—Consent.

Marylebone, East.—A building to abut upon Dean's-mews, Cavendish-square, St. Marylebone (Mr. W. Hearn for the Belsize Motors London Agency, Ltd.).—Consent.

Strand.—An iron and glass shelter at Blanchard's Hotel, Beak-street, Strand (Messrs. J. Wilkins & Co. for Messrs. Blanchard).—Consent.

Strand.—Two three-story oriel windows and a hood in front of the East India United Service Club, Duke-street, St. James' (Mr. W. Wallace for the East India United Service Club).—Consent.

Woolwich.—An iron and glass shelter at No. 78, Plumstead Common-road, Woolwich, to abut upon Wrottesley-road (Mr. J. O. Cook for Mr. W. Killick).—Consent.

Lines of Frontage and Construction.

Bow and Bromley.—Retention of an iron and concrete timber drying stage at Tredegar Works on the south-western side of Ordell-road, Bow (Perry & Co. (Bow), Ltd.).—Consent.

Islington, South.—The retention of an existing addition and the erection of a further addition at the rear of No. 347, Liverpool-road, Islington (Mr. R. Midworth for Mr. W. H. Callow).—Consent.

Hampstead.—The retention of a wood and glass bookstall of a temporary character at Swiss Cottage Railway Station, and abutting upon the western side of Finchley-road, Hampstead (Messrs. D. Cubitt Nichols, Sons, & Chuter).—Refused.

Lewisham.—An iron and glass shelter at Stanstead Lodge, Stanstead-road, Forest Hill, to abut upon Northwood-road (Mr. A. Sykes for Mr. H. Gardener).—Refused.

Width of Way, Frontage, and Construction.

Hammersmith.—Permission to retain for a further period the temporary greenhouse in front of No. 229, King-street, Hammersmith (Mr. T. Grant).—Consent.

Hampstead.—A wood and iron building in the grounds of the Freemason's Arms public-house, on the north-western side of Downshire-hill, Hampstead, to abut also upon the southern side of Willow-road (Humphreys, Ltd., for Mr. W. Hill).—Refused.

Space at Rear.

Stepney.—A modification of the provisions of sect. 41, with regard to open spaces about buildings, so far as relates to the proposed erection of a workshop building at the rear of Nos. 125, 127, and 129, Duckett-street, Stepney (Mr. H. Summers).—Consent.

Deviation from Certified Plans.

Chelsea.—Deviations from the plan certified by the District Surveyor, under sect. 43, so far as relates to the proposed rebuilding of Nos. 185 and 186, Sloan-street, Chelsea (Mr. J. P. Briggs).—Consent.

Strand.—A deviation from the plans approved for the erection of a building upon the site of Nos. 71, 72, and 73, St. James-street, and Nos. 1, 2, 3, 4, 5, and 6, Little St. James-street, Strand, so far as relates to the omission of the staircase between the fourth and fifth floors and the provision in lieu thereof of a staircase in the north-eastern open space (Messrs. W. Woodward & Sons).—Consent.

Space at Rear and Alterations of Building.

Paddington, North.—A modification of the provisions of sect. 41 with regard to open spaces about buildings, so far as relates to the proposed erection of a building at the rear of No. 90, Kensal-road, Paddington (Mr. W. B. Medlicott for the Wiltshire United Dairies, Ltd.).—Consent.

Formation of Streets.

Lewisham.—Application of Mr. A. W. Osborn for Mr. J. Watt for an extension of the period within which the roadway of a proposed street on the Summerfield estate, Catford, to lead from Ravensbourne Park-road to Ravensbourne-park, was to have been defined and thrown open to the public as a highway.—Consent.

Bow and Bromley.—That an order be issued to Messrs. Howard & Butler refusing to sanction the formation or laying out of streets for foot traffic only to lead from Bow-road to Cemetry-row, Poplar, and the erection of houses in connexion therewith (Mr. T. Tyrie).—Refused.

Buildings for the Supply of Electricity.

Bow and Bromley.—A fitting shop at the Poplar Metropolitan Borough Council's electricity works on the northern side of Yeo-street, Poplar, to abut upon the western side of

Violet-road (Messrs. Nicholls & Reynolds for the Poplar Metropolitan Borough Council).—Consent.

Separation of Buildings, Construction and Alterations of Buildings.

St. George, Hanover-square.—Alterations to a staircase and gangway at No. 38, Albemarle-street, St. George, Hanover-square (Messrs. Joseph & Smithem for Mr. E. Gurney).—Consent.

Cubical Extent.

Bermondsey.—A deviation from the plans approved for the erection of an addition at the premises of E. Lazenby & Son, Ltd., Crimscott-street, Bermondsey, so far as relates to the provision of non-automatic sliding armoured doors in lieu of iron doors to two openings on the ground floor between room D6 and room D6A (Mr. W. Downs for E. Lazenby & Son, Ltd.)—Consent.

Kensington, North.—The erection at the premises of the National Motor Cab Company, Barlby-road, Kensington, of two blocks of buildings, each to exceed in extent 250,000 cubic ft., and to be used only for the purposes of a garage for motor cabs (Mr. E. Keynes Purchase for the National Motor Cab Company).—Consent.

St. George, Hanover-square.—The erection at the premises of Lewis & Allenby, Ltd., abutting upon Regent-street, Conduit-street, and New Burlington-place, St. George, Hanover-square, of a division next to Regent-street to exceed in extent 250,000 cubic ft., and to be used in part as shops, showrooms, and workrooms, and in part as offices (Mr. F. T. Verity for Lewis & Allenby, Ltd.).—Consent.

City of London.—The retention of a building on the eastern side of Old Bailey, City, with divisions exceeding in extent 250,000 cubic ft. (Mr. P. Hoffmann).—Refused.

Uniting of Buildings.

City of London.—Uniting of No. 2A, Moorgate-street, City, with No. 13, King's Arms-yards, at the ground floor level (Mr. H. Chatfeild Clarke for the British Bank of South America, Ltd.).—Consent.

Paddington, South.—The uniting of Nos. 26, 27, and 28, Leinster-gardens, Paddington, and the erection of balconies and a guard rail in front of the said buildings (Mr. W. M. Glendinning).—Consent.

Architectural Societies.

GLASGOW INSTITUTE OF ARCHITECTS.

An extraordinary meeting of Fellows of the Glasgow Institute of Architects was held at the Secretary's chambers, 115, St. Vincent-street, on the 29th ult., Mr. George Bell, President, in the chair. After the election of a number of new members had been dealt with, the subject of the competition for two new schools, promoted by Govan School Board, was brought up, and the Institute approved of a memorial signed by a number of Glasgow architects suggesting amendment of the conditions of the competition. A letter was read from the Hamilton (Burgh) School Board showing that the Board had given partial effect to the recommendations of the Institute regarding the conditions of the competition for their new school. It was agreed that unless the Board gave fuller effect to the recommendations made the Institute would be under the necessity of advising its members not to take part in the competition, and, further, that the name of the assessor should be publicly stated.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.

The annual general meeting of this Society was held on Thursday, April 29, in the Seneral lecture-room at the University, the President, Mr. W. C. Fenton, in the chair. The accounts and annual report of the Council were received and adopted. The ballot for officers resulted as follows:—President, Mr. W. J. Hale; Vice-President, Mr. J. B. Mitchell Withers; Treasurer, Mr. F. Fowler; Hon. Secretary, Mr. J. R. Wigfull; Council—Messrs. H. Coverdale, C. B. Flockton, H. L. Paterson, A. E. Turnell, A. F. Watson, E. Winder, W. G. Buck, C. F. Innocent, and H. I. Potter. The Past-Presidents are also members of the Council. At the conclusion of the meeting, the members present were conducted over the recently-opened Edgar Allen Library by the architect, Mr. E. M. Gibbs.

MANCHESTER SOCIETY OF ARCHITECTS.

At the annual meeting of the Manchester Society of Architects, the following were elected office-holders for the coming year:—President, Mr. P. S. Worthington, M.A., F.R.I.B.A.; Vice-Presidents, Mr. W. C. Hardisty, F.R.I.B.A., and Mr. Edgar Wood, A.R.I.B.A.; Honorary Secretary, Mr. Isaac Taylor, F.R.I.B.A.; Assistant Honorary Secretary, Mr. Gerald Sanville, A.R.I.B.A. Members of Council—Messrs. John Brooke, Godfrey Colles, A. E. Corbett, John Ely, J. T. Halliday, F. E. L. Harris, P. D. Lodge, F. W. Mee, Paul Ogden, J. H. Sellers, John Swarbrick, and J. H. Woodhouse. The membership of the Society stands at 265, as against 257 twelve months previously.

BRISTOL SOCIETY OF ARCHITECTS.

The annual general meeting and President's conversazione in connexion with this Society were held, on April 26, at the Fine Arts Academy. A satisfactory report of the session now ending was presented by the Honorary Secretary (Mr. W. L. Bernard), and this, together with the balance-sheet, was unanimously adopted. The election of Council and officers for the ensuing year included the following appointments:—President, Mr. Mowbray Green, F.R.I.B.A. (Bath); Vice-Presidents, Mr. H. Dare Bryan, F.R.I.B.A., and Mr. G. H. Oatley. Members of Council—Messrs. G. C. Awdry, F.R.I.B.A.; W. L. Bernard, F.R.I.B.A.; R. C. James, F.R.I.B.A.; W. S. Skinner, F.R.I.B.A.; F. W. Wills, F.R.I.B.A.; and J. Foster Wood, A.R.I.B.A. Associate Members of Council—Messrs. C. F. Dening and G. C. Lawrence, A.R.I.B.A. Honorary Secretary and Treasurer, Mr. T. H. Weston, F.R.I.B.A. During the evening the President (Mr. Mowbray Green) gave an address to the students present. After pointing out the value of an extended tour on the Continent, he urged them one and all to set before themselves a high standard of scholarship and efficiency in qualifying for the great work which the future would bring to those who had fitted themselves for it. No labour or self-denial, however great, should be spared in attaining this ideal. Votes of thanks having been accorded to the President and other helpers, the meeting terminated.

NORTHERN ARCHITECTURAL ASSOCIATION.

The fiftieth annual report of the Association gives the number of members in each class as follows (a comparison being made with the figures given in the last annual report):—

	1908.	1907.
Members	85	84
Associates	88	86
Students	75	83
Total	248	253

At the last annual meeting Mr. Geo. T. Brown, of Sunderland, was elected President, he having filled the position of Vice-President during the years 1905-6. The President, as representative of the Association, was in June last elected a member of the Council of the Royal Institute.

In accordance with the general wish of members that Mr. A. B. Plummer's long and efficient services as Honorary Secretary should be recognised in some way, it was decided early in the session to make a suitable presentation to Mr. Plummer, and Mr. Cackett kindly consented to act as Hon. Treasurer to the fund. The presentation, consisting of a hall clock with chimes, and a silver salver with engraved inscription, was made by the President on behalf of the members at the close of the annual excursion at Northallerton.

The Preliminary and Intermediate Examinations of the Royal Institute of British Architects were held in Newcastle and other centres on June 15, 16, and 17, and November 9, 10, and 11, 1907. The examinations at Newcastle were conducted in the rooms of the Association. In the Preliminary Examination, Mr. G. E. Charlewood, Mr. W. R. Davison, and Mr. R. W. Parker, students of this Association, were successful. In the Intermediate Examinations, Mr. M. Leybourne, Mr. R. Stokoe, and Mr. F. L. Turnbull, associates of this Association, also Mr. O. F. Davison, Mr. J. R. Maughan, Mr. W. Milburn, jun., Mr. W. W. Nimmo, Mr. T. J. Peters, and Mr. N. Wigzell, students of this Association, were successful. At the Final and Special Examination held in November, two associates of this Association were successful, namely, Mr. C. Groves and Mr. G. E. Hunter. These gentlemen have since been elected associates of the Royal Institute.

In view of the wish expressed in the last annual report that measured drawings and sketches of local architectural interest should be published and issued to members, the Council are gratified to learn that the Royal Institute are moving in the matter on general lines, and have stated their willingness to co-operate with the Records Committee of the Royal Institute.

Several local architectural competitions have been brought to the notice of the Practice Committee. In many cases representations have been made to the promoters with a view to unsatisfactory conditions being amended. In some cases the efforts of the Committee have been successful. It is therefore decided that a most determined policy shall be followed, in order to place this question on fair and honourable lines. The Practice Committee also wish once more to draw the attention of members to the desirability of making uniform charges for the preparation of bills of quantities.

GLOUCESTERSHIRE ARCHITECTURAL ASSOCIATION.

A monthly meeting of the Gloucestershire Architectural Association was held at Northgate Mansions, Gloucester, on Thursday, the 29th ult., the President, Mr. H. W. Chatters, in the chair. An address was given by the President on "The Architectural Outlook," in which many points of great importance to the profession were considered in detail. The long and continued unemployment in the building trades, trades unions, "builder-architects," the compulsory registration of architects, pupilage, architectural education, and many legal points were dealt with by Mr. Chatters, and gave rise to an animated discussion, in which most of those present joined.

EDINBURGH ARCHITECTURAL ASSOCIATION.

This Association paid an afternoon visit to Kirkcaldy on Saturday, the 1st inst. On arrival at the station a special tram-car conveyed the party to Ravenscraig Castle; Mr. John Watson, F.R.I.B.A., who acted as leader, explained that the Castle had been founded by James II. shortly before his death in 1460. On leaving the Castle, the party walked through the grounds to the ruins of St. Serf's Church, Dysart, dedicated in 1245. Sir Michael B. Nairn, Bart., who accompanied the party, received a vote of thanks, on the motion of Mr. E. C. H. Maidman, architect, for his kind permission to visit the buildings. The afternoon's outing was concluded with a visit to several houses of the XVIth and XVIIth centuries in the town of Dysart.

BANKING PREMISES, ALNWICK.—Premises are in process of construction in Bondgate for Lloyds Bank, Ltd., whose architect, Mr. Geo. Reavell, jun., is responsible for the plans. The contract has been secured by Mr. Thomas Muckle, of Rothbury, and the sub-contractors are Messrs. Burn & Sons, of Spittal, for joiner work; Messrs. Reavell Brothers, of Alnwick, for plumbing and electric lighting; Mr. J. Purdie, of Alnwick, for slating and plastering; and Messrs. Adam Robertson & Son, of Alnwick, for painting and glazing.

Engineering Societies.

ASSOCIATION OF MUNICIPAL AND COUNTY ENGINEERS.

The Association has decided, with the sanction of the Board of Trade, to change its name to "The Institution of County and Municipal Engineers." The necessary alterations to the memorandum and articles have therefore been embodied in the resolutions which appear, in the name of the President, for the special general meeting to be held during the forthcoming Malvern meeting. The Council have accepted an invitation from the Imperial International Exhibition, 1909, at the White City, Shepherd's Bush, to arrange for the display of models and plans in connexion with housing and garden city schemes. Members desirous of exhibiting models or plans are requested to communicate with the Secretary.

SOCIETY OF ENGINEERS.

On Monday last a paper on "The Influence of Rainfall on the Design of Sewers" was read by Mr. C. A. Battiscombe. The author states that existing records of rainfall are of little value in settling the provisions that must be made for surface water passing to the sewers, which is generally estimated on the basis of the total rainfall over the whole area to be drained. This method, however, frequently leads to inadequate provision for storm water. Judging from the Report of the Royal Commission on Sewage Disposal, it is not unusual for sewers to serve as land drains also, but it is a mistake to allow the quantity of foul sewage which has to be purified, and in some cases lifted, to be increased by a large volume of subsoil water, and suitable precautions would render this unnecessary. It will generally be found that the augmented cost of dealing with the larger quantity of sewage would in time considerably exceed the cost of repairing the sewer. Since but few reliable records are kept of the rate of rainfall in inches per hour, the author thinks that the frequency of heavy storms may be assumed to be greater than is generally believed, and that the provision to be made for storm water, when designing sewers, should be 3 in. per hour during a period of fifteen minutes. A detailed illustrative description was given for the purpose of demonstrating the author's methods of estimating the quantities of water which may be expected to find their way into the sewers from (*a*) roofs and yards, (*b*) road surfaces; and the opinion was expressed that in the more densely populated centres the proportion of rain-water from roofs and clean yards exceeds that from roads and foul surfaces. Referring to the use for drinking purposes of rain-water from roofs, as sometimes obtains both at home and abroad, the inference is drawn that this water, if allowed to pass into the sewers, is wasted, while at the same time the cost of purification and pumping (if any) is increased. As regards the cost of providing a separate system of drainage for roof and surface water, the author considers that the cost would not be prohibitive, while the accruing advantages would be considerable.

Competition News.

HIGH SCHOOL FOR GIRLS AT BISHOP'S STORTFORD.

The Governors of the Hertfordshire and Essex High School for Girls invited six architects to submit plans for a school at Bishop's Stortford. They unanimously recommended the plans prepared by Mr. J. W. Fisher, of Wellingborough, and the Essex Education Committee and the Hertfordshire Central Plans Sub-Committee have agreed to this. Mr. Fisher's plans provide for an assembly-hall for 170; two classrooms for twenty-five, two classrooms for twenty, lecture-room for thirty, a laboratory for twenty, an art-rom for fourteen, a cookery-room for eighteen, a dining-hall for eighty, also kitchen, principal's-room, assistant's-room, lavatories, and caretaker's lodge. Extension can be made in the future at a comparatively small cost. The building is to be constructed of local bricks, with Essex brick facings, and stone dressings, the roof covered with Staffordshire tiles, the floors fire-resisting and laid with hard wood, and the walls plastered, the general design of the building being in the English Renaissance style. The estimated cost is 5,900*l*. Mr. Fisher is to select a quantity surveyor and to advertise for tenders. These are to be considered by a Joint Committee of Hertfordshire and Essex representatives, who are empowered to accept a tender not exceeding 6,200*l*.

BOOKS RECEIVED.

SANITATION AND SANITARY ENGINEERING. By W. Paul Gerhard, C.E. Second Edition. (Published in New York by the author.)

DUSTLESS ROADS TAR MACADAM. By J. Walker Smith. (Chas. Griffin & Co. 10s. 6d.)

THE FORCE OF THE WIND. By Herbert Chatley, B.Sc. (Chas. Griffin & Co. 3s.)

FRENCH CHÂTEAUX AND GARDENS IN THE XVITH CENTURY. By Jacques Androuet du Cerceau. Selected and described by W. H. Ward, A.R.I.B.A. (B. T. Batsford. 25s.)

LONDON AND DISTRICT BOROUGH COUNCILS.

Deptford.—Application is to be made to the London County Council for the provision of a shelter on the Hilly Fields open space.

Greenwich.—Eversley-road and a portion of Kinveachy-gardens are to be formed and paved as new streets, at an estimated cost of 523*l*. and 597*l*. respectively. Charlton-road is to be repaired with tar-macadam, at a cost of 975*l*., and Shooter's Hill-road is to be repaired with similar material, at a cost of 1,139*l*. Fifteen other roads are to be repaired with granite or rag and flint, at a cost of 1,481*l*. The Highways Committee recommend the acceptance of the tenders of Messrs. Pasterfield & English, Streatham, to clear the site and erect stable buildings at the Norman Wharf depôt for 1,298*l*., also to erect a cart-shed for 98*l*. The following plans have been passed by the Council:—Mr. Henry Thorman, to build an addition to Bell's Asbestos Company's works, Blackwall-lane; Messrs. J. Davey & Co., to build an addition to 132, Elliscombe-road.

Hackney.—The Council has agreed to the following applications:—Mr. F. Collins, to build six houses in Holmbury-View, and to construct 500 lin. ft. of pipe sewers at Hawkwood Mount, Upper Clapton.

Lambeth.—Drain relaying is to be carried out in various streets at a cost of 196*l*. Paving work is to be carried out at Brixton-hill, the cost being put down at 195*l*. Messrs. H. Wakeford & Sons, architect, of 267, Clapham-road, are to be asked to prepare a specification of repairs needed to the South Lambeth and Carnegie Libraries. Only local builders are to be asked to send in tenders for the work. The various consents necessary have been obtained for the selling to the Summerstown Undenominational Mission, Blackshaw-road, of 2,609 super. ft. of land on the east side of the Mission Hall, with a frontage of 30 ft. to Blackshaw-road. Drainage plans, submitted by Mr. H. A. Sargeant, for five houses proposed to be erected in Finsen-road, Herne-hill, were approved by the Council at their last meeting.

Lewisham.—A give-and-take line of frontage in Bromley-road has been arranged between the Council and the proprietors of the Forster Estate. The agreement includes expenditure in piping to the amount of 500*l*. at once, and an additional 300*l*. within five years. Newlands Park, Sydenham, is to be paved as a new street. Fourteen roads are to be repaired with asphalt, artificial stone, and tar paving, at an estimated cost of 420*l*., and four roads are to be painted with tar, at an estimated cost of 37*l*. The following building plans have been passed by the Council:—Messrs. Norfolk & Prior, fourteen houses, in Hither Green-lane and Brownhill-road; Messrs. W. J. Scudamore & Sons, six houses in Thornwood-road; Messrs. Noys & Howes, two houses in Coombe-road; Mr. W. A. Vercoe, addition to the golf clubhouse, Southend-lane; Messrs. T. Crossley & Son, Parish Hall, Manor-lane.

Leyton.—The Havelock Patent Partition Company, 63, Finsbury-pavement, E.C., and Mr. G. H. Smith, Brough House, Draytonroad, Leytonstone, are to construct stores and mess-houses at the generating-station, the contract price for the former being 167*l*. 14s., and for the latter 94*l*. 9s. 6d.. The Council have passed plans lodged by Mr. P. Cornish for an addition to the Northcote public-house, Grove Green-road.

Paddington.—A difference between the Council and Mr. A. N. Coles, the contractor for the construction of Warwick-avenue bridge, in regard to an asphalt account, is to be settled by the payment to Mr. Coles of a net amount of 173*l*. Notice is to be served upon the Regent's Canal Company, under the Canals Protection (London) Act, 1898, to erect unclimbable iron fencing along the north side of Regent's Canal, between Maida Vale and Warwick-avenue. An application by Messrs. G. W. Higgins & Co. for permission to erect a lounge addition and an iron and glass porch at 37, Westbourne-gardens has been passed.

Poplar.—Four streets are to be paved with second-hand granite, at an estimated cost of 1,863*l*., and a portion of Mornington-road is to be paved with soft-wood blocks, at an estimated cost of 360*l*.

Shoreditch.—Mr. B. E. Nightingale is to carry out repairs to the tower stonework at the Town Hall, at a cost of 73*l*. 15s. The Ironmongers' Company propose to sell the site of their almshouses in Kingsland-road, for building purposes. An application by the Company for the necessary consents to this proposal is to be opposed by the Borough Council unless an undertaking is given that a substantial portion of the existing open space be retained.

Southwark.—The Borough Engineer and Medical Officer of Health have issued a joint report upon a circular letter issued by the Hampstead Borough Council, asking, in view of a decision of the Divisional Court, that the London County Council be requested to amend their by-laws so as to validate the practice which has hitherto existed of local authorities proceeding in the case of breaches of the Plan and Drainage By-laws, against the person who actually carries out the works. The joint report says that it can hardly be said to have been hitherto the invariable practice of Metropolitan Borough Councils to proceed against the builders. In Southwark, neither the Borough Engineer or the Medical Officer of Health can remember any case similar to that of Hampstead in which the builder carrying out the work was proceeded against when the owner of the property could be found. The only case of a contravention of the by-laws where Southwark Council proceeded against the builder was under sect. 14 of the by-laws referring to water-closets, etc., and in which notice had not been sent to the clerk of the sanitary authority of intention to construct or amend the pan and trap of a closet. It was occasionally found in the ordinary inspection of houses in Southwark that work had been done in contravention of the drainage by-laws of the London County Council without the knowledge of the local authority, and the Borough Engineer and the Medical Officer of Health think that the irregular carrying out of work under the drainage by-laws would be avoided if a section were added to these by-laws something similar to sect. 14 of the by-laws referring to water-closets, etc., and which requires "that every person who shall intend to construct any water-closet, earth-closet, or privy, or to fit or fix in connexion with any water-closet, earth-closet, or privy, any apparatus or any trap or soilpipe shall before executing any such works give notice in writing to the clerk of the sanitary authority." A copy of the foregoing report is to be sent to the Hampstead Borough Council. Notice has been received from the London County Council of their intention to proceed with the construction of authorised tramways (1) at the southern approach of Blackfriars Bridge; and (2) from Blackfriars Bridge, *viâ* Southwark-street to Southwark Bridge-road. Plans have been lodged by the City of London Electric Lighting Company, Ltd., 64, Bankside, in regard to new buildings the company propose to erect on the south side of Bankside and on the south and west side of Pike-gardens, Southwark, with a bridge at a height of 12 ft.

Stepney.—Electric mains are to be extended in two streets. Permission has been granted to Messrs. Knight Brothers to erect a warehouse in Gin-alley.

Walthamstow.—The Council have passed plans for Mr. H. Brodey, for five houses in Milton-road, and for Mr. H. E. Pattenden, for two houses in Higham Hill-road.

Wandsworth.—An arrangement has been come to with Brandon's Brewery, Ltd., that the completion of the widening of High-street, Putney, at Nos. 66 and 68, be postponed for the present. The improvement, when executed, will be continued in front of No. 70. Tenders are to be invited for the paving of Rectory-lane, Tooting. Two roads in Streatham and three others in Tooting are also to be paved. Messrs. Harringdon & Co. are to pave Acuba-street, Southfield, at 270*l*. Messrs. S. Lane & Co. are to pave Ashvale-road, Tooting, at 748*l*. 10s., and Mr. Thomas Adams is to pave Earlsdom-road, Putney, at 424*l*. The Burials Committee have provisionally approved a scheme for the drainage of Streatham Cemetery, at an estimated cost of 1,700*l*. Plans have been passed as follows:—Messrs. Bromley & Watkins, for the erection of a telephone exchange in Streatham High-road; Messrs. G. P. & H. Barnes, for alterations and additions to

library at Conyers-road, Streatham; Mr. J. H. Jenkin & Co., for the redrainage of All Saints' Vicarage, Streatham; Messrs. Rowley Brothers, for the erection of 112 houses in Derinton-road, Church-lane, Lessingham-avenue, and Okeburn-road, Tooting.

Wimbledon.—The Taroads Syndicate, Ltd., is to dress with tar 69,792 super. yards of road, at a cost of 374*l.* Home Park-road is to be made up, at a cost of 440*l.* The Surveyor is to prepare detailed plans for making up unpaved back passages in four streets. Plans have been passed for Mr. C. Cargill for alterations to Whitefield, Marryatt-road, also for Mr. P. L. Truckle, for photographic studio at rear of No. 31, St. George's-road.

PROJECTED NEW BUILDINGS IN THE PROVINCES.

ABERDEEN.—Church institute, Rise-street. Mr. G. Mitchell, architect, 148, Union-street, Aberdeen.

Barnet.—Manual Instruction centres. County Surveyor, Hertfordshire County Council, St. Albans.

Bedford.—All Saints' Church. Messrs. Blowfield & Son, architects, 6, Montague-place, W.; Mr. F. Foster, builder, Bedford.

Bedminster.—Theatre. Mr. W. Skinner, architect, Edinburgh-chambers, Bristol.

Birkenhead.—Motor garage. Mr. E. Ware, architect, Imperial-buildings, Exchange-street, Liverpool.

Birmingham.—Handicrafts centre, Birchfield-road. Mr. J. P. Osborne, architect, 95, Colmore-row, Birmingham.

Bishop Auckland.—Hippodrome. Mr. E. Taylor, architect, Northgate, Darlington; Messrs. Nichols & Reynolds, builders, Westminster, London.

Branksome (Bournemouth).—St. Aldhelm's Church (8,000*l.*). Mr. C. Hare, architect, 7, Gray's Inn-square, W.C.

Broxburn. — Infectious diseases hospital (5,000*l.*). Mr. W. Baillie, architect, 2, West Regent-street, Glasgow.

Collastown (Westmeath).—Roman Catholic church. Messrs. O'Callaghan & Webb, architects, 26, South Frederick-street, Dublin.

Cradley Fields.—Mission church (850*l.*). Rev. R. H. Edmondson, Cradley Fields, Cradley (Worcs.).

Dudley.—The Council have passed the following plans:—Additions to works, Angel-street, for Mr. T. W. Adshead; two houses, Hampton-street, Netherton, for Mr. W. H. Tilley; two houses, the Belper, for Mr. H. Pittaway; three houses, Baptist-end, Netherton, for Mr. W. Whitehouse.

Eastbourne.—Additions, Prince of Wales inn, Mr. W. Bussy, architect, Messrs. W. Martin & Sons, builders; rebuilding 26, High-street, Mr. C. W. Carr, architect; additions, St. Winifreds, Fairfield-road, Mr. F. G. Cooke, architect.

Fairhaven.—Church. Mr. A. Brocklehurst, architect, 30, Brown-street, Manchester.

Fazakerley.—Mission church (1,500*l.*). Rev. A. G. Barnard, St. Nathanials, Fazakerley, Liverpool.

Hele (Exeter).—Gymnasium. Messrs. Commin & Son, architects, Bedford-circus, Exeter.

Horsell.—Enlargement of church. Messrs. W. Unsworth & Son, architects, Station-road, Petersfield, Hants.

King's Heath.—Additions, Hare and Hounds public-house. Mr. C. Collett, architect, Exchange-buildings, High-street, Birmingham.

Kingston-on-Thames. — Additions to St. Paul's Church. Mr. F. Peck, architect, 24, Old Queen-street, Westminster, S.W.

Kirby Muckslоe.—Residence. Mr. S. H. Langley, architect, 1, Berridge-street, Leicester.

Lee (Kent).—Extensions, Church of Good Shepherd. Messrs. Greenaway & Newbury, architects, Queen Anne's-gate, S.W.

Liverpool. — Residence (3,000*l.*). Messrs. Woolfall & Eccles, architects, 60, Castle-street, Liverpool.

Manchester.—Roman Catholic Home. Mr. A. C. Hill, architect, 9, Albert-square, Manchester.

Mickley.—Church. Messrs. Badenoch & Bruce, architects, Emerson-chambers, Newcastle-on-Tyne.

Misley.—Residences. Mr. P. Smith, architect, Crown-buildings, James Watt-street, Birmingham.

Nailsea (Bristol).—Church hall (1,000*l.*). Mr. W. Shapstone, architect, Nailsea, Bristol.

Newport (Mon).—Laundry buildings. Mr. J. W. Jordan, builder, Newport, Mon.

Northampton.—The Town Council have passed the following plans.—Two houses, Park-crescent, Mr. A. P. Hawtin; new skating-rink, Wellingborough-road, for the Empress Skating Rink Company; two houses, Sandringham-road, for Mr. E. Green; new skating-rink, George Hotel, George-row, for Mr. W. Carr; new fireproof workshops, St. James's Park-road, for Messrs. Dover, Ltd.; rebuilding Sportsman's Arms public-house, Bath, for Messrs. P. Phipps & Co., Ltd.; alterations to Durham Ox public-house, Augustin-street, for Messrs. P. Phipps & Co., Ltd.; additions to factory, St. Michael's-road, for Messrs. Pollard & Son.

Northwold.—New church. Rev. E. E. Malravers, The Fen, Northwold, Norfolk.

Nuneaton.—Church institute. Mr. E. Shepherd, Bridge-street, Nuneaton.

Oxford.—New buildings, Newnham College (10,000*l.*). Mr. B. Champneys, architect, 19, Buckingham-street, W.C.

Perry Bar.—Vicarage house. Messrs. Hale & Son, architects, Guildhall-buildings, Birmingham.

Pocklington (Yorks).—New infants' school (815*l.*). Building Surveyor, County Hall, Beverley.

Port Sunlight.—Extensions to Lever's premises. Messrs. W. & S. Owen, architects, Cairo-street, Warrington.

Portswood.—Messroom, etc., at stores (315*l.*). Mr. J. A. Crowther, Engineer, Southampton Town Council.

Seven Sisters (Neath).—Church. Mr. J. C. Rees, architect, The Parade, Neath.

Shankhouse.—Mission church. Rev. C. E. Baldwin, St. Peter's, Shankhouse, Newcastle Diocese.

Southampton.—The Town Council have passed the following plans:—Seven houses, St. James's-road, for Mr. J. L. Bennett; three houses, St. Catherine's-road, for Mr. F. Lowe; two houses, Highfield-lane, for Messrs. Hair & Bucknill; corrugated iron buildings, St. James's-road, for Mr. S. Dawes; six houses in Lumsden-avenue, for Messrs. Jurd & Sanders; six houses, King Edward-avenue, Mr. W. B. Hill; three houses, Winchester-road, Mr. F. W. Young.

Sutton (Surrey).—Adult school, Benhill-avenue. Mr. T. Wall, Blythewood, Sutton.

Swansea.—New exchange buildings. Mr. O. Schenck, Dicks Exchange Offices, Swansea.

Talybout.—Mission church (1,300*l.*). Rev. Z. W. Davies, Talybout, Llanfihangel-geneur-glyn.

Thames Ditton.—Addition to Cottage Hospital. Mrs. Sherley, secretary, Litchfield.

Torquay.—Sunday-school. Messrs. Bridgman & Bridgman, architects, Flut-street, Torquay.

Wallsend.—Church. Messrs. Hicks & Charlwood, architects, 67, Westgate-road, Newcastle.

Warrington.—The Town Council have passed the following plans:—Salting-rooms, latrines, etc., Winwick-street, for the Warrington Co-operative Society; twenty houses, Amelia-street; twenty-two cottages, Fitzherbert-street, and five houses, Synge-street, for Mr. Geo. Smith; skating-rink, Wilderspool-causeway, for the Warrington Skating Rink Company; alterations to premises, Orford-lane and Forster-street, for the Warrington E. I. Co-operative Society, Ltd.; motor garage, Manchester-road, for Mr. Boyer.

Wimborne.—Church and school. Messrs. Chinchen & Son, architects, Parkstone, Dorset; Mr. Hodder, builder, Shaftesbury, Dorset.

Withernsea.—Extension of infants' department of the Withernsea school (841*l.* 6s.). Mr. W. H. Carr, builder, Withernsea.

Witley (Surrey).—Residences. Messrs. Buckland & Farmer, architects, Norwich-buildings, Congreve-street, Birmingham.

Wrexham.—Church buildings (1,200*l.*). Rev. D. Davies, Smithfield, Wrexham.

LONDON COUNTY COUNCIL EDUCATION COMMITTEE.

THE Education Committee of the London County Council met on Wednesday.

Training Colleges for Teachers.—The proposal, already outlined in the *Builder*, for the erection of four permanent training colleges for teachers, at Tooting, Fulham, and West London (two) was adopted.

Higher Grade School for Norwood.—It was arranged that a higher grade school instead of an elementary school should be erected on the Craister-road site, Norwood.

Demolition of Property.—It was decided to demolish houses in Albion-road and Southgrove, Mile End, preparatory to the erection of a new school.

Abandoned Sites.—The following sites, which have been acquired for educational purposes, are now considered unnecessary, and it was decided that the Improvements Committee should deal with them with a view to disposal:—Hortensia-road, Chelsea; Lillie-road, Fulham; Woodbridge-street, Finsbury: Elizabeth-street, Woolwich; Knee-hill, Woolwich; Cator-street, Peckham; Rolls-road, Old Kent-road; Sprules-road, Deptford; warehouse at rear of Henshaw-street, Bermondsey; Eardley-road, Streatham; and three houses in Rastell-avenue, Streatham.

Hackney School.—The tender of Messrs. Galbraith Brothers was recommended for acceptance (8,140*l.*) for the erection of a higher school for 320 children on the Lauriston-road site, Hackney.

Bow and Bromley Improvements.—Messrs. Holliday & Greenwood's tender, 14,893*l.*, was recommended for structural improvements at Norman-street school, Bow and Bromley.

Hoxton Schemes.—Schemes were passed as follows respecting a site at Hoxton:—Handicraft centre for forty boys, with cookery and housewifery centre; elementary school for 623 children; higher mixed school for 390; school of 160 defective children; and schoolkeeper's house.

Housewifery Centre at Fulham.—A scheme was passed for a housewifery and laundry centre on the St. Dunstan's-road site, Fulham.

Schoolkeepers' Houses.—A report on the question of the desirability of having schoolkeepers' houses erected separately from school buildings was presented and adopted. It is declared inadvisable to erect houses immediately adjoining the schools, even though the Finance Committee urged such a policy for reasons of economy.

Silent Paving.—A proposal was carried for putting silent paving, at an estimated cost of 3,930*l.*, outside several schools.

Annual Estimates.—A report on the annual estimates stated that 323,508*l.* was stipulated for new schools and additions. The cost allowed for new schools was 20*l.* for building per place, and 11s. for equipment. The average cost of the sites per place was 10*l.*

Obituary.

MR. H. COOPER.

The death is announced, in his 87th year, of Mr. H. Cooper, head of the firm of Messrs. Henry Cooper & Sons, surveyors, of Reading. Mr. Cooper had been in the profession all his life, following his father, grandfather, and great-grandfather, whose place of business was at Maidenhead. He had been associated with many of the largest works in Berkshire and elsewhere, and one of his earliest business remembrances was the measuring of some of the Great Western Railway work in 1837, at the time of the extension to Reading. Mr. Cooper had taken an active part in the business up to four years ago, when his health broke down, but his connexion with the firm had not ceased at the time of his death.

General Building News.

NEW CHURCH, PETERSHAM.

The dedication recently took place of the new church of All Saints at Petersham. The new building was designed by Messrs. John Kelly, Claude Kelly, and A. C. Dickie, architects, and the work was carried out by Mr. G. W. Heasler, builder, of Richmond.

CONGREGATIONAL CHURCH, PRENTON (BIRKENHEAD).

The first section of this church has been erected on a site at the junction of Prenton-road West and Storeton-road, having the future spire so designed that it may be seen from the four roads which converge at this point. When completed the church buildings will consist of nave, transepts, chancel, minister's and deacons' vestries, church parlour, and several classrooms, which will be conveniently connected with the existing school, the whole forming a fine group of buildings well adapted to the growing needs of the neighbourhood. The style is late Gothic; the walls internally and externally are faced with white Storeton stone, the internal dressings being of red Runcorn stone. The roof principals and ceilings are of oak, as also are the internal fittings, doors, screens, etc. The church, when completed, will accommodate about 550, including a future gallery if found desirable. The estimated cost of the completed church is about 6,500*l.*; the nave, however, only has been erected at present, at a cost of 4,500*l.*, giving accommodation for about 400. The work is being carried out by Messrs. W. H. Forde, of Birkenhead, from the designs and under the superintendence of Mr. T. W. Cubbon, also of Birkenhead, whose designs were placed first in competition over twenty years ago, when the existing school chapel was erected.

P.M. CHURCH, ETC., CONSETT.

On a site in Delves'-lane, Consett, a new Primitive Methodist church, hall, and schools are to be erected at a cost of about 10,000*l.* It is, however, only contemplated to proceed with the Sunday-schools and caretaker's residence at present, the erection of the church itself being deferred. The school hall will seat 500 adults, and has fourteen classrooms,

etc. The design is the work of Mr. J. W. F. Phillipson, Newcastle.

SCHOOL EXTENSIONS, WARRINGTON.

Extensions have been made to the Boys' Parochial School, Church-street, Warrington. The alterations will provide extra accommodation for 240 scholars in four classrooms, namely, sixty scholars in each room; two additional cloakrooms, a mistresses' common-room, and a master's common-room, have also been provided. The builder was Mr. H. Fairclough, and the architects Messrs. W. & Segar Owen.

FORESTRY AND RURAL ECONOMY SCHOOLS, OXFORD.

The new buildings for the Schools of Forestry and Rural Economy erected in Parks-road were recently opened. The Forestry School contains accommodation for some thirty students, and includes lecture-rooms, a museum, a library, stores, and a dark chamber for photographic purposes. The School of Rural Economy contains similar accommodation. The buildings have been erected from the designs by Messrs. N. W. & G. A. Harrison, architects, of Oxford, at a cost of about 10,000*l.*

PUBLIC SCHOOL, EVESHAM.

The opening has taken place of the enlarged Public Hall and Library buildings at Evesham. The architect was Mr. G. H. Hunt, of Evesham, and the contractors were Messrs. Espley & Co., Ltd., of Evesham, whose tender was 6,850*l.* There are various other expenses which will bring the total cost of the new buildings up to over 8,000*l.*, exclusive of furniture.

NEW BARRACKS, REDFORD, MIDLOTHIAN.

It is stated that the preliminary work in connexion with the building of the new cavalry barracks at Redford, Colinton, Midlothian, will be commenced within the next two or three months, and that building operations will probably commence towards the end of the year. The main building will have three sides of a uniform length of 400 ft., with three stories throughout. The barracks proper will occupy the two upper stories, the ground floor being given over for administrative purposes, officers' stores, general stores, recreation-rooms, etc. The main feature of the arrangements is the division of the men's quarters in such a manner that troops and squadrons will be kept together. Accommodation will be provided for about 600 non-commissioned officers and men, and each man will have a lighted cubicle, measuring 6 ft. by 7 ft. 6 in., the partitions leaving a clear space of 2 ft. 6 in. below the ceiling. In the space between the two side wings low buildings will contain the dining-room, an apartment capable of accommodating a whole regiment, and a large vacant space will be left, with regard to the utilisation of which no definite decision has been come to. Lavatories and ablution rooms will also be in this part. The canteen, grocery, bar, and kitchens are to be in the main building in proximity to the dining-room. Running out from the front towards the Colinton-road will be two groups of buildings, including the officers' mess and the sergeants' mess, and the large space left between them will provide a parade-ground 200 yds. long and 100 yds. broad. The married quarters, the riding school, and the farriers' shop will also be separate erections. The stables will number twelve in all, one for each troop, and they will be situated on both sides of the barracks, but at a little distance away. Mr. Harry B. Measures, F.R.I.B.A., Director of Barrack Construction, is responsible for the design.

EXTENSION OF SHIRE HALL AT BEDFORD.

The Special Committee of the Bedfordshire County Council, which has been considering the question of additional accommodation required at the Shire Hall, has approved plans jointly submitted by Mr. H. Percy Adams, 28, Woburn-place, London, and the County Surveyor, Mr. William Henry Leete. In the judgment of the Committee an excellent feature of the plans is that the new buildings, instead of forming an isolated building, will be approached from the main entrance hall, and will also have a separate entrance in St. Paul's-square. There are two alternative schemes, one for offices without a Council-chamber, at a total estimated cost of 5,645*l.*, and the other for offices with a Council-chamber, at a cost of 6,993*l.* The Committee leave it to the Council to decide what will be done with reference to the Council-chamber.

SLAUGHTER-HOUSE, ABERDEEN.

The combined slaughter-house and hide market for Aberdeen, which have just been opened, are situated in Hutcheon-street West, and have, as shown in some notes prepared by the architect, Mr. John Rust, a frontage to that street of 206 ft. They are bounded by Fraser-road on the west, having a frontage to that street of 406 ft., and Fraser-place on the north, and occupy an area of 8,400 super. yds. The main entry to the slaughter-house is from Hutcheon-street, but all the cattle, etc., are taken in by a 12-ft. passage entering from Fraser-place. This passage leads into the byres, where accommodation is provided for 290 cattle, 260 sheep, and fifty pigs. There are twenty-five single slaughtering booths and two double booths. At the east side of the main entrance are the superintendent's and sanitary inspector's offices, with side door into the main cartway, waiting and men's rooms for the staff, and storing accommodation is also provided. At the north end of the slaughtering booths on the east side a disintegrator and boiler-house have been erected, provided for the purpose of disposing of the diseased carcases. The total cost of the buildings and ground occupied by the slaughter-house amounts to upwards of 18,000*l.* The Hide Company's premises are situated immediately to the west of the slaughter-house, and have a frontage to Hutcheon-street of 50 ft. They comprise shops, a tallow-house, a refrigerating-house, the hide market proper, which measures 120 ft. by 105 ft., and various offices for the clerical staff. The cost of this building, including ground, is upwards of 8,000*l.*, or the total cost of the premises upwards of 26,000*l.* in all. The architect for the whole work was Mr. John Rust, Aberdeen, and the contractors are:—For the slaughter-house—Mr. George Hall, mason work; Messrs. Leslie & Hay, carpenter work; Mr. Walter Simpson, plumber work; Messrs. Scott & Son, plaster and concrete work; Messrs. Charles Maitland & Sons, slater work; Messrs. Murray & Mitchell, painter work; Mr. George Thomson, ironwork; Messrs. Pratt & Keith, electric lighting; Messrs. Ralston, Goodwin, & Co., iron railings; Messrs. Pickering, Ltd., hoists; and Messrs. Ernest Scott & Co., disintegrating apparatus. The contractors for the Hide Company's premises were:—Messrs. George Ogg & Sons, mason work; Messrs. Leslie & Hay, carpenter work; Mr. James Ross, plumber work; Messrs. Scott & Son, plaster and concrete work; Messrs. Merson & Stewart, slater work; Mr. Benjamin Main, painter work; Mr. George Thomson, ironwork; Messrs. John Blaikie & Sons, electric lighting.

MASONIC HALL, CHESTER.

A new Masonic hall is being built on a central site in Hunter-street. The tender of Messrs. McLellan Brothers, Chester, has been accepted, and the architects are Messrs. J. H. Davies & Sons. The estimated cost of erecting the hall is 2,500*l.*

HOUSING SCHEME, BLACKROCK, CO. DUBLIN.

An inquiry was recently held by Mr. P. C. Cowan, Chief Engineering Inspector, Local Government Board, into an application of the Blackrock Urban Council for sanction to a loan for the erection of lodging-houses for the working classes at Brookfield. The total estimated cost of the work, the plans of which have been prepared by Mr. H. E. Powell, is slightly under 14,500*l.*

Stained Glass & Decoration.

MEMORIALS TO THE LATE C. E. KEMPE.

An inscribed tablet, bearing a trophy of coat-arms, carved and richly painted and gilded, and having above it a gilded crucifix, has been set up in the Stratford's Sacellum in the south transept of Chichester Cathedral. The windows which have just been inserted, to his memory, in Southwark Cathedral and in the Church of St. Agnes, Kennington-park, are from the studios of Messrs. Kempe & Co., Mr. Kempe's successors, of Nottingham-place, Marylebone-road.

ABOYNE CHURCH.

Several windows have just been installed by Messrs. William Morris & Co. (Ruskin House), Westminster, in an Episcopal church recently erected at Aboyne, N.B. from the plans of Messrs. Fryers & Penman, architects, of Largs. In the church is a five-light Passion window containing ten subjects. This window, as well as the remainder of those in the church, is in the early XVth century style, the glass employed for other than the subject-matter having been collected from old churches and buildings in England and the Continent.

Appointment.

Mr. Frederick Rings, architect, of Bank-chambers, Tooley-street, London Bridge, has accepted the honorary appointment of architect to the German Protestant Church and Schools, Whitechapel, which was held by the late Mr. E. A. Gruning.

Miscellaneous.

PROFESSIONAL AND BUSINESS ANNOUNCEMENTS.

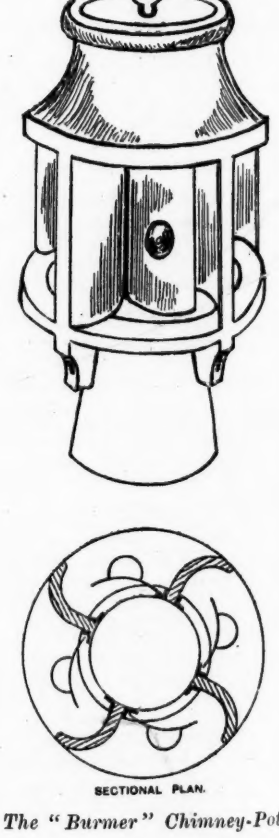
Mr. J. S. Gibson, architect, of 5, Old Bond-street, W., has taken into partnership Mr. F. P. Skipwith and Mr. W. S. A. Gordon, and their practice will be carried on under the name of Messrs. J. S. Gibson, Skipwith, & Gordon, architects, at the same address.—Mr. Mark H. Judge and Mr. Max Judge have taken into partnership Mr. Guy Wilfrid Hayler, and on and after May 1 the firm will be conducted under the title of Mark H. Judge, Son, & Hayler, architects, sanitary surveyors, and engineers.

CARDIFF'S WATER SUPPLY.

Sir Luke White's Select Committee of the House of Commons has passed the preamble of the Bill, promoted by the Cardiff Corporation, for expending over 200,000*l.* on the construction of a new reservoir, with the object of increasing the available water supply. Evidence in support of the Bill was given by Mr. Priestley (the City Engineer), Mr. E. P. Hill, C.E., Sir Alexander Binnie, Mr. J. Watson (Waterworks Engineer to the Bradford Corporation), and others. The chief opposition came from the local authority of Merthyr, which is the nearest town to the source of Cardiff's supply. The Merthyr authority asked that after Cardiff was supplied they should be allowed to take a supply from the area on payment. The Committee refused to grant a compulsory clause to this effect, but counsel for the Cardiff Corporation said that naturally, if they had more water than they needed, they would be glad to sell it to a neighbouring authority.

THE "BURMER" CHIMNEY-POT.

This is the chimney-pot referred to in our last issue as made by Messrs. Doulton & Co. and exhibited at their stand at the Building Trades Exhibition. The patentees state that by its construction the wind automatically closes the shutter on the windward side so that wind cannot enter the chimney. They add:—



The "Burmer" Chimney-Pot.

"The shutters, which are of stout aluminium, are attached to light, detachable aluminium frames, and are therefore proof against rust; at the same time being so light that the slightest wind will close them, the updraught in the flue causing them to fly open against the stops, immediately on the cessation of the external atmospheric pressure.

The removable cover in the top of the pot is so constructed that, while easily removed for roping, it is quite secure from being pushed off by the sweep's brush when swept from below."

WAKEFIELD CORPORATION BILL.

The Select Committee of the House of Lords, presided over by the Earl of Camperdown, has passed the preamble of this Bill, by which the Corporation will be given an extension

of ten years for the construction of the Oxgreens, Booth Dean, and Linsgreave reservoirs. The estimate of expenditure on the proposed works is 150,000*l.*

SMOKE NUISANCE IN CHELSEA.

The Medical Officer of Health for Chelsea, in his annual report issued recently, states that large volumes of dense smoke continued to be emitted from the four chimneys of the generating-station in Lots-road, of the Underground Electric Railways of London Company, Ltd., from the commencement of the year 1908 until the first week in June. Subsequent to that date the amount of smoke most materially decreased, and very little exception can now be taken to the smoke emitted from these chimneys. He was informed by the resident engineer to the Company that the great improvement noted above may be attributed (1) to the new revolving wire-mesh screen, inserted at a cost of 2,500*l.*, into the adit conveying the water of the Thames to the condenser pumps, which separates out the leaves and *débris*, which formerly so often occasioned choking of the pumps and a consequent loss of vacuum; (2) to the more thorough regulation of the draught to the furnaces through the fire doors, which has now been carried out on improved principles; and (3) to the use of coal of suitable quality, owing to favourable prices to the consumers being now current for such qualities of coal. It would appear, therefore, the Medical Officer goes on to say, as if the Borough Council's proceedings in 1907 against the Company, which were a failure, and resulted in the payment of 300 guineas costs to the defendants, were, at any rate, instrumental in convincing the Company that there was room for improvement in the conduct of their works, *quâ* smoke emission, and the results now obtained appear to be for the present satisfactory.

MUNICIPAL IMPROVEMENTS.

A number of Local Government Provisional Orders are confirmed in the Provisional Order Bills, Nos. I. and II., which have been introduced into the House of Commons by Mr. Masterman. Amongst the works contemplated are the widening of St. John-street, Bridlington, for which the Corporation have scheduled forty-two properties; and the widening of London-road and Reigate-road by the Dorking Corporation. The Rural District of Newport Pagnell is acquiring land for sewage disposal; the Totnes local authority taking land for a cemetery; the Derby Corporation are borrowing additional money for improving the markets; the Urban District Council of Oswaldtwistle is asking for power to borrow 50,000*l.* for its gas undertaking; and the Corporation of Walsall is purchasing the Bloxwich Music-hall for the purpose of converting it into a public hall.

SURVEYORS' INSTITUTION EXAMINATION RESULTS.

We are informed that in recent examinations 240 pupils of the Surveyors' Institution were successful, this number representing very nearly all the candidates prepared under the tuition of the Institution. Of seven recent prize winners six were pupils of the Institution, viz.: for the Institution Prize, a Special Prize, the Beadel Prize, the Penfold Gold Medal, the Crawter Prize, and the Galsworthy Prize. The result speaks for the thoroughness of the training given by the Surveyors' Institution.

"ARCHITECTS AND HEATING ENGINEERS."

In reference to a Note on page 509 of our last issue, the Secretary of the National Association of Master Heating and Domestic Engineers writes to say that it was not their *Journal* which set up a claim that a heating engineer should be appointed independently of the architect; that the paragraph which caught our attention was a summary of a Report of a Departmental Committee of the Local Government Board, and not an expression of their own opinion. In that case we can only say that we do not think the Local Government Board should have made a suggestion which amounts to taking the control out of the hands of the architect.

SCOTTISH CONTRACTORS' ASSOCIATION.

A feeling has for some considerable time past been very generally expressed amongst the contractors for public works in Scotland that the formation of an association for the purpose of promoting their common interests would be of great advantage. At a preliminary meeting held in Glasgow in January last, the formation of such an association was favourably received, and a Provisional Committee was appointed to take the necessary steps for ascertaining more generally the views of contractors; and at an adjourned meeting, held on April 7, a resolution in favour of the formation of an association was duly passed, and a temporary Committee appointed to draw up a scheme of the constitution of the association and to arrange for the election of office-bearers. The Committee having completed their arrangements, the first meeting of the association was held in the Athenæum, Glasgow, on Wednesday, April 28, when the scheme of constitution drawn up by the Committee was approved and adopted, and the office-bearers elected. Mr. James Young, sen., of Messrs. James Young, Ltd., was elected President; and Mr. R. C. Brebner, of Messrs. R. C. Brebner & Co., Vice-President; and the following members of Council:—Messrs. W. G. Flett, W. Jackson, James Kinniburgh, William Mackay, Gavin Shanks, John Smillie, James Urquhart, William White, and James Young, jun. Mr. Kinniburgh was also appointed Treasurer, and Mr. H. B. Neave, solicitor, 79, West Regent-street, Glasgow, Secretary.

Law Reports.

CASE UNDER SECTS. 70 (1) (C) AND 145 OF THE LONDON BUILDING ACT, 1894.

AT the West London Police Court on April 28, before Mr. Garrett, magistrate, the case of S. F. Clarkson *v.* Larter was heard. The defendant had put up, without notice to the District Surveyor, a partition dividing a large room on the second floor at No. 14, Norland-square.

Mr. Pierron, who appeared for the District Surveyor, argued, *inter alia*, that as sect. 70 (1) (*c*) of London Buiding Act might be contravened the District Surveyor ought to have received notice, and that the case was frequently occurring.

Mr. G. F. Darker, barrister, who defended, stated that there was actually no contravention of the Act, and that accordingly there was nothing for the District Surveyor to supervise.

The magistrate decided that notice should have been given to the District Surveyor under sect. 145 of London Building Act, 1894, and fined the defendant 1*l.* with costs.

HOLBORN LIGHT CASE.

THE case of Rudhahn & Sons *v.* the Holborn Viaduct Land Company came before Mr. Justice Parker, in the Chancery Division, on the 30th ult.—an action by the plaintiffs to restrain the defendant company from obstructing their light.

Mr. Mark Romer, K.C., and Mr. Dighton Pollock appeared for the plaintiffs; and Mr. Hamilton, K.C., and Mr. Fisher Williams for the defendants.

Mr. Romer said the plaintiffs sought to restrain the obstruction by the defendants of the light coming to certain of the windows in the plaintiffs' business premises, situated at Nos. 32 and 33, Holborn Viaduct. Plaintiffs' claim was not based upon prescription, but upon the fact that the defendants were their landlords and were the owners of the offending premises, and the plaintiffs' claim was therefore based either on the implied grant or upon the covenant for quiet enjoyment. But whether the plaintiffs based their claim upon the grant or upon the covenant it appeared to him (counsel) that the question the learned judge had to determine was the same question as arose under prescription, and he proposed merely to satisfy his lordship on the evidence that the diminution of the plaintiffs' light was of such a substantial character as to interfere with the comfortable enjoyment of their premises, and which prevented them from carrying on their business as comfortably and efficiently as before the obstruction.

Mr. Hamilton asked whether the plaintiffs, as stated in the pleadings, complained of the obstruction of air?

Mr. Romer said they did not, but they based their claim on the question of light only.

His lordship: Do you claim an injunction or damages?

Mr. Romer said the plaintiffs asked for a mandatory injunction.

His lordship: Are the defendants' buildings expensive buildings?

Mr. Romer said that what was complained of were iron and glass erections which had been put up between the walls of the two buildings. The facts were these:—In 1893 the plaintiffs, who were three foreign gentlemen carrying on business in London as dealers in precious stones, acquired the lease by assignment of the rooms on the first floor of No. 33, Holborn Viaduct. No. 33 formed part of a block of buildings which included Nos. 32 and 34, and all that block of buildings belonged to, or at any rate, the reversion on the plaintiffs' lease was vested in, the defendant company. In 1900 the plaintiffs, again by assignment, acquired the leasehold interest in the rooms on the first floor of No. 32, which adjoined No. 33, and from that time they had used those two sets of rooms as their offices. The lease of No. 33 expired in 1904, and on July 8, 1904, plaintiffs obtained from the defendants a further lease of those rooms there. In that lease there was the usual covenant for quiet enjoyment, and no doubt the defendants would not dispute that the plaintiffs were entitled to the easement of light which No. 33 apparently enjoyed over the adjoining premises at that date, which premises were the premises of the lessors. In December, 1907, the defendants were desirous of making certain internal alterations to Nos. 32 and 33, and the alterations which they contemplated were the insertion of a passenger lift in the centre of the buildings, and for that purpose they approached the plaintiffs for leave to do this because, although in the lease of 1904 the defendants had reserved to themselves the powers to enter upon No. 33 for the purpose of constructing the lift, they had no power to interfere with the plaintiffs' tenancy of No. 32 for that purpose. In December, 1907, there was an agreement entered into between the parties by which the plaintiffs agreed to surrender their existing lease of No. 32, and the defendants agreed to grant to them a new lease in the same form of the first floor of No. 32, and the lease provided that the defendants were to be at liberty to execute those matters. Before he dealt with what had happened in consequence of the agreement, he would call his lordship's attention to the exact position of the premises. Nos. 32 and 33 stood on the south side of the street, and consequently the front windows faced due north. With those windows they were not concerned in this action. They were only concerned with the windows on the south side of the first floor of the two buildings, and those windows at the date of the lease looked into a narrow sort of courtyard. Plaintiffs' offices were lighted by six windows looking into the courtyard or area. That courtyard was open on the east side, but it was closed in on the west and south sides by the walls of buildings which belonged to the defendants. Those walls came above the level of the first floor of Nos. 32 and 33, in which were the six windows lighting the plaintiffs' offices. Since the lease was granted the walls had been raised by the addition of one story. That was not complained of by the plaintiffs, but it was a material circumstance for this reason. His lordship would observe that probably before the addition of the fifth story the plaintiffs' windows were not particularly well lighted, and the addition of that story had certainly the effect of reducing the light without seriously affecting the value of the plaintiffs' premises. If defendants had done no more than add the story he did not think the plaintiffs would have complained. However, since the addition of the story every atom of light was of importance to the plaintiffs. So far as the plaintiffs understood the only other alteration that was going to be made was the insertion of the lift, but about October, 1907, the defendants began to erect scaffolding in the courtyard. The effect of this, as the courtyard was only about 16 ft. wide, was to practically deprive the plaintiffs' rooms, or some of them, of all light, and the scaffolding was such that it was impossible for the plaintiffs to appreciate what was going on. In point of fact, one of the plaintiffs' clerks was told that the scaffolding was erected for the purpose of adding on the fifth story. But in August, 1908, when the scaffolding was removed, or shortly before, the plaintiffs discovered that the defendants had erected across the courtyard four bridges running from each floor to the corresponding floor on the other side. The flooring of the bridges was prismatic glass, which was kept so dirty as to be almost impervious to light. Above each of those bridges was a roof which was 8 ft. 6 in. wide, the bridge being 5 ft. wide. The roof was made of rough plate-glass, which, in the atmosphere of London, soon got covered with film and dirt. One of these galleries or bridges ran immediately over five of the plaintiffs' windows. Complaint was made of this, and letters passed between the parties, and eventually the writ in the action was issued. In the original statement of defence defendants denied that what they had done interfered with the plaintiffs' lights in such a way as to give them any cause of action; but in March last they pulled down the lowest of the cross galleries, leaving untouched the bridges and roofs to bridges. In the amended defence the defendants said that plaintiffs discovered the erection of the gangways before August, 1908, and made no complaint with reference thereto. Defendants admitted that the gangways and roofing as originally erected gave the plaintiffs a cause of action, and they brought into Court 50*l.* in respect of the damages sustained by the plaintiffs. Defendants also went on to say that since the commencement of the action they had removed so much of the gangways and roofing as projected over the plaintiffs' windows, and that therefore there was no interference with the plaintiffs' light.

His lordship: The real point now I have to decide is whether what is left is a nuisance according to recent cases, and whether, if so, I

LAW REPORTS.—*Continued on page 568.*

List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, xix.; Auction Sales, xxviii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

The date given at the commencement of each paragraph is the latest date when the tender, or the names of those willing to submit tenders, may be sent in.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements; and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Competitions.

JUNE 4.—**Bodmin.**—HOSPITAL.—Competitive plans are invited for the erection in Bodmin of a cottage hospital, at an approximate cost of 2,000*l.*, by the Committee of the East Cornwall Hospital. Three premiums, viz., 12*l.* 12s., 8*l.* 8s., and 5*l.* 5s., are offered for the three sets of plans. A form stating all particulars will be sent to applicants. The site can be inspected on application to the Secretary, Mr. Henry D. Foster.

* JULY 9.—**Stoke-upon-Trent.**—ADDITIONS TO TOWN HALL.—The Stoke-upon-Trent Corporation invite designs for additions to existing Town Hall. See advertisement in this issue for further particulars.

JULY 31. — **Glasgow.** — LAYING-OUT LAND.—The Patrons of the Royal Incorporation of Hutchesons' Hospital in the City of Glasgow invite competitive designs for laying-out for feuing and building their lands of Thornliebank, in the Parish of Eastwood and County of Renfrew, near the City of Glasgow. The terms and conditions of the competition, and, upon deposit of 3*l.* 3s., skeleton plans showing the situation and boundaries of the different portions of the lands, may be had from the Chamberlains of the Hospital, Messrs Hill & Hoggan, 194, Ingram-street, Glasgow, with whom designs must be lodged not later than July 31 1909. Premiums of 100*l.*, 75*l.*, 50*l.*, and 25*l.* respectively will be awarded.

Contracts.

BUILDING.

MAY 8.—**Gosforth.**—ENLARGEMENT OF CHURCH.—Enlargement of Gosforth Parish Church. Applications to Messrs. Hicks & Charlewood, architects, 67, Westgate-road, Newcastle-on-Tyne.

MAY 10. — **Ardmore.** — RESIDENCE.—The Rev. J. Casey, P.P., Ardmore, Co. Waterford, invites tenders for the erection of a residence and out-offices at Ardmore, in accordance with the plans, etc., prepared for same by, and under the superintendence of the architect, Mr. James F. McMullen, M.R.I.A.I., of 30, South-mall, Cork.

MAY 10. — **Edinburgh.** — MOTOR GARAGE.—The Magistrates and Council invite tenders for work in connexion with erection of a motor garage at the City Hospital, Comiston-road, according to plans, etc., prepared by Mr. James A. Williamson, A.R.I.B.A., Public Works Office, City Chambers, who will furnish intending offerers with schedules of quantities, etc.

MAY 10.—**Rhondda Fach.**—WORKMEN'S INSTITUTE.—Erection of a workmen's institute and gymnasium at Wattstown, Rhondda Fach. Plans, etc., may be seen at the Surveyor's office, National Colliery, Wattstown.

MAY 10. — **Shildon.** — ALTERATIONS TO CEILING. — Alterations to the ceiling of Shildon Wesleyan Church. Names to Messrs. Kitching & Lee, architects, Houndgate-chambers, Darlington.

MAY 11.—**Liverpool.**—RESTORATION AFTER FIRE.—The owners of Jagers Warehouse and Shed, Atlas-street, Liverpool, invite tenders for masons', joiners', plumbers', and slaters' works required in the restoration after fire. Plans, etc., may be seen, and bills of quantities obtained, at the offices of Messrs. Matthew Watson, Landless, & Pearse, architects and surveyors, 21, Dale-street, Liverpool, and at Burnley.

MAY 11.—**Seaham Harbour.**—NEW P.M. CHURCH AND CARETAKER'S HOUSE.—Erection and completion of the above. Names to Mr. J. W. F. Phillipson, architect, Murton-chambers, 8, Grainger-street, Newcastle-on-Tyne.

MAY 11. — **Southall.** — LODGE.—Southall Norwood U.D.C. invite tenders for the erection of a lodge at the Recreation Ground (Southall Park). Plans, etc., may be seen, and forms of tender obtained, at office of Mr. Reginald Brown, A.M.Inst.C.E., F.S.A., Engineer and Surveyor to the Council, Public Offices, Southall.

MAY 12.—**Danebridge.**—SCHOOL.—The Managers of Danebridge C.E. School invite tenders for additions and alterations to their school. Bills of quantities may be obtained, and drawings inspected, upon application to Mr. A. E. Powles, architect, Northwich, upon payment of 1*l.* 1s.

MAY 12.—**Hawes.**—ALTERATIONS, ETC., TO SCHOOL.—The North Riding of Yorkshire C.C. Education Committee invite tender for the proposed alterations and additions to school. Forms of tender, etc., at the school during ordinary school hours.

MAY 12.—**Hull.**—POTTING SHED.—The Corporation invite tenders for the construction of a potting shed at the West Park. Forms of tender, etc., may be obtained at the City Engineer's Office.

MAY 12-27.—**Ipswich.**—ALTERATIONS, ETC.—Ipswich Guardians invite tenders for alterations and additions and new latrines at St. John's Home, Ipswich. Application to Mr. J. A. Scheuermann, architect, Northgate-street, Ipswich. Each application must be accompanied by a cheque for 1*l.* 1s.

MAY 12.—**Oldham.**—EXTENSIONS TO THE GENERAL WASH-HOUSE AND LAUNDRY OF THE WORKHOUSE.—Amended plans, etc., may be inspected, and quantities obtained, at the offices of Mr. Charles T. Taylor, architect, 10, Clegg-street, Oldham.

MAY 12. — **Oystermouth and Dunvant.** — SCHOOLS.—The Glamorgan C.C. invite tenders for (1) alterations and additions to the Council school at Oystermouth, near Swansea; (2) foundations for temporary buildings at the Council school at Dunvant, near Swansea. Plans, etc., may be seen, and bills of quantities obtained, for Work No. 1, and plans may be seen, and copies of the specification obtained, for Work No. 2, at the Mumbles Police-station. The plans, etc., of both the works may be seen or obtained at offices of Mr. T. Mansel Franklen, Clerk of the C.C., Glamorgan C.C. Offices, Westgate-street, Cardiff.

MAY 12.—**Stone Flatts, Kirklinton.**—OUTBUILDINGS.—Tenders are invited by the various trades for the erection of outbuildings at Stone Flatts, Kirklinton. Plans, etc., may be seen at the above address. Mr. John Ferguson, Stone Flatts, Kirklinton.

MAY 12.—**Wiggenhall St. Germans.**—ADDITIONS, ETC.—Additions to cottage, and general repairs at Fitton Hall, Wiggenhall St. Germans, for Mr. Wm. Wing. Plan, etc., at offices of Messrs. Walker & Walker, architects and surveyor, Wisbech.

MAY 13.—**Derby.**—SHELTERS, ETC.—The Arboretum and Recreation Grounds Committee invite tenders from local builders for the erection of shelters, conveniences, etc., at Normanton Recreation Ground, and for the reconstruction of timber floor of the York Bridge, Bass' Recreation Ground. Plans, etc., may be seen, and bills of quantities, etc., obtained, on application at the offices of Mr. John Ward, M.Inst.C.E., Borough Surveyor, Borough Surveyor's Office, Babington-lane, Derby.

MAY 13.—**Gordon-Richmond Estates (Glenlivet District).** — BUILDINGS. — Estimates are wanted for the mason, carpenter, and slater works of buildings (twenty-three contracts). Plans, etc., may be seen at the Estate Office, Drumin, Glenlivet, or with Mr. A. Thomson, architect, Fife-Keith.

MAY 14.—**Cowdenbeath.**—MINERS' RESCUE STATION.—Mason, joiner, plumber, and plaster works of proposed miners' rescue station, Cowdenbeath. Plans can be seen at the office of the architect, Mr. David B. Campbell, Victoria-buildings, Cowdenbeath, from whom schedules may be obtained.

MAY 14.—**Cumwhinton.**—HOUSE.—The Small Holdings and Allotments Committee of the Cumberland C.C. invite tenders for the erection of a dwelling-house at the Stripes, Cumwhinton. Plans, etc., may be seen at the office of Mr. C. W. Allan Hodgson, Clerk to the Committee, The Courts, Carlisle.

MAY 14.—**Elgin.**—ALTERATIONS.—Estimates wanted for the mason, carpenter, plumber, painter, and glazier work of alterations on property at 16, Commerce-street, Elgin, for Mr. C. A. Christie, merchant. Plans, etc., may be seen at the office of Mr. James Jamieson, architect, 77, High-street, Elgin.

MAY 14. — **Fife Estates (Elgin District).**—ALTERATIONS, ETC.—Tenders wanted for the mason, carpenter, plumber, slater, plaster, and painter works of the following:—(1) Alterations on house at Logieburn; (2) additions to house and steading at Newton of Blackhills; (3) additions and alterations on steading at Erroll; (4) additions and alterations on steading at Mains of Cotts; (5) cottage and bothy at Coxton; (6) new house at Lennoch; (7) additions to house at Bauds. The plans, etc., may be seen with Mr. John Wittet, architect, Elgin.

MAY 14.—**Halifax.**—CLUB.—Erection of a Liberal Club at Moorside, Ovenden, Halifax. Plans, etc., may be seen, and bills of quantities obtained, at offices of Mr. Lister Coates, A.R.I.B.A., architect, Central-chambers, No. 10, Central-street, Halifax.

* MAY 14.—**Peckham Rye, S.E.**—REPAIRS, ETC.—The Guardians of the Parish of Bermondsey invite tenders for repairs and decorative work at their Children's Homes, Peckham Rye. See advertisement in this issue for further particulars.

MAY 15.—**Abergavenny.**—CHURCH EXTENSION.—Tenders are invited for building a north aisle, vestry, etc., to Holy Trinity Church, Abergavenny. Plans, etc., may be seen, and bills of quantities obtained, on payment of a deposit of 2*l.* 2s., at the architect's offices, Mr. E. A. Johnson, F.R.I.B.A., Abergavenny.

MAY 15.—**Ballintemple.**—CHURCH WORK.—Repairing and refurnishing Ballintemple Church. Specifications can be seen with Mr. R. N. Wellwood, C.E., Spring Villa, Cavan, and with Rev. W. T. Stewart, Ballintemple Rectory, Cavan.

MAY 15.—**Greenlough.**—IMPROVEMENTS TO CHURCH.—Extensive improvements to Greenlough Catholic Church, Co. Derry, for the Rev. Thomas Maguire, P.P. Plans, etc., may be obtained at the Parochial House, Greenlough, Portglenone, or at offices of Mr. J. V. Brennan, C.E., architect, Belfast Bank-chambers, Belfast.

MAY 15.—**Kingussie.**—HALL.—Mason, carpenter, slater, plumber, plasterer, painter, and glazier works of new hall to be erected in Spey-street, Kingussie. Plans, etc., may be seen with the architect, Mr. Alexander Mackenzie, C.E.

* MAY 15.—**Rugeley.**—SCHOOL.—The Staffordshire Education Committee invite tenders for a new Council school at Hamstall Ridware, near Rugeley. See advertisement in this issue for further particulars.

MAY 15.—**Salterhebble.**—PRECIPITANT STORE.—Halifax Highways Committee invite tenders for the execution of the works (all trades) required in the erection of a precipitant store at the Sewage Works, Salterhebble. Plans, etc., may be seen, and forms of tender obtained, on application to Mr. James Lord, M.Inst.C.E., Borough Engineer, Town Hall, Halifax, upon payment of the sum of 1*l.*

MAY 15.—**Treskinnick.**—FARMHOUSE.—The Small Holdings Committee of the Cornwall C.C. invite tenders for the erection of a farmhouse at Treskinnick, in the Parish of Poundstock, near Bude. For plans, etc., apply to the County Land Agent, Public Rooms, Truro.

MAY 17. — **Glasgow.** — SINGLE-STORY SHED. — The Trustees of the Clyde Navigation invite tenders for the construction of a goods shed, about 718 ft. long by 57½ ft. wide, on Springfield Quay, south side of Glasgow Harbour. Drawings may be seen, and specification, etc., obtained, on application to the Trustees' Engineer, at his office, 16, Robertson-street, Glasgow.

* MAY 17. — **Kensington.** — ROOFING, ETC.—The Kensington B.C. invite tenders for inclosing and roofing-in of the depôt in Walmer-road, Notting Hill, W. See advertisement in this issue for further particulars.

MAY 17.—**North Seaton.**—HOSPITAL ADDITIONS.—Ashington U.D.C. invite additions to Isolation Hospital, near North Seaton Station. Plans, etc., can be seen, and full particulars obtained, from the Surveyor, Mr. Alexander Wood, at his office, Council-chambers, Ashington.

MAY 17.—**Pontefract.**—HOUSES.—Tenders invited for conversion of premises, Southgate, and Friends' Meeting House-lane, Pontefract, into eight houses, for Mr. Charles W. Addingley, The Beeches, Pontefract. Plans, etc., can be seen, and all information obtained, at office of Mr. James Heseltine, architect and surveyor, Old Castle Drawing Office, Pontefract.

MAY 17.—**Poole.**—COTTAGES.—The Corporation invite tenders for the erection of a pair of semi-detached cottages at the Corfe Mullen Pumping Station, in connexion with the new works of water supply. The drawings may be inspected, and copies of the specification, etc., obtained, at the Waterworks Department, Municipal Buildings, Poole.

MAY 17.—**Purton.**—ENLARGEMENT OF CHAPEL.—Enlargement of chapel and erection of classroom at Lydiard. Plans, etc., to be seen at Mr. W. J. Morse's, Lydiard Green, Purton, Wilts.

MAY 18.—**Cockfield.**—SCHOOL.—The C.C. of Durham invite tenders for new Council School at Cockfield. Plans, etc., may be seen, and bills of quantities obtained, at the office of Mr. F. E. Coates, Shire Hall, Durham.

MAY 18.—**Coventry.**—HOSPITAL ADDITIONS.—The Committee of Coventry and Warwickshire Hospital invite tenders for the erection of proposed out-patients' department, in accordance with plans, etc., prepared by Mr. A. Hessell Tiltman, F.R.I.B.A., 2, Verulum-buildings, Gray's Inn, London, W.C., and Mr. Herbert W. Chattaway, Trinity-churchyard, Coventry. Plans, etc., may be seen at the architect's office, Trinity-churchyard, Coventry, from whom bills of quantities and forms of tender can be obtained upon depositing the sum of 2*l.* 2s.

MAY 19.—**Brynmawr.**—POST-OFFICE, ETC.—Pulling down certain old buildings and erecting complete a small post-office and telephone exchange at Brynmawr. Plans may be seen at office of Mr. W. H. Dashwood Caple, F.R.I.B.A., architect, 2, Church-street, Cardiff, and at the office of Mr. J. G. Bishop, solicitor, Brynmawr.

MAY 19.—**Kirkham.**—SCHOOLS, ETC.—Lancashire Education Committee invite tenders for the erection of a new elementary school and cookery and manual building at Kirkham, to accommodate 200 scholars. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 2*l.*

MAY 19.—**Manchester.**—WORKHOUSE EXTENSION.—Manchester Guardians invite tenders for the erection of a block for the accommodation of able-bodied men and for other additions and alterations to the existing buildings at their Workhouse at Crumpsall, near Manchester. Plans may be seen at the office of Mr. A. J. Murgatroyd, architect, 23, Strutt-street, Manchester, from whom quantities may be obtained upon payment of a deposit of 1*l.* 1s.

* MAY 20.—**Wandsworth.**—CONCRETE OR WOOD FLOOR.—The Guardians of the Wandsworth Union invite tenders for the provision of a new concrete

and timber ward floor. See advertisement in this issue for further particulars.

MAY 21.—**Port Talbot.**—LIFE-SAVING APPARATUS HOUSE.—The Board of Trade invite tenders for the erection of a rocket life-saving apparatus house at Port Talbot. Copies of the plan, etc., can be obtained on application at the Harbour Master's Office, Port Talbot.

MAY 22.—**Ditton.**—SCHOOL.—Lancashire Education Committee invite tenders for the erection of a new elementary school for 120 scholars, at Ditton, near Widnes. The plans may be seen, and bills of quantities obtained, at the office of the County Architect, Mr. Henry Littler, 16, Ribblesdale-place, Preston, by payment of a deposit of 2*l.*

MAY 22.—**Penclawdd.**—CHAPEL.—Erection of a large new Welsh Congregational Chapel at Penclawdd, having 800 sittings. Plans, etc., may be seen with the Secretary, Mr. John Rees, Penlan, Penclawdd, or at office of Mr. W. Beddoe Rees, architect, 3, Dumfries-place, Cardiff, where bills of quantities may be obtained on deposit of 3*l.* 3s.

MAY 23.—**Wareham.**—HOUSE.—Erection of a dwelling-house at Wareham. Plans, etc., may be seen at office of Mr. W. Watts Fookes, architect and surveyor, Wareham, Dorset, by appointment.

* MAY 24.—**Portslade.**—HOSPITAL EXTENSION.—The Hove Corporation invite tenders for enlarging the Administration Block, constructing porter's lodge, water tower and destructor, forming paths, laying drains, and other work at Infectious Diseases Hospital at Portslade. See advertisement in this issue for further particulars.

* MAY 27.—**Canterbury.**—ALTERATIONS TO LAUNDRY.—The Kent County Lunatic Asylum Committee invite tenders for alterations and improvements to laundry and works in connexion therewith at Asylum, Chartham Downs, near Canterbury. See advertisement in this issue for further particulars.

MAY 29.—**Seven Sisters.**—CHURCH.—Erection of a new church at Seven Sisters, near Neath. Plans, etc., may be seen, and bill of quantities obtained, at the offices of the architect, Mr. J. Cook Rees, The Parade, Neath.

* JUNE 7.—**Redhill.**—SCHOOL.—The Reigate Education Committee invite tenders for school at St. John's, Redhill. See advertisement in this issue for further particulars.

* JUNE 14.—**Birmingham.**—SUPERSTRUCTURE.—The Corporation of Birmingham invite tenders for the superstructure of the buildings in extension of the Council House. See advertisement in this issue for further particulars.

NO DATE.—**Glasgow.**—BUILDINGS AT ASYLUM.—The Managers of the Royal Glasgow Asylum for the Blind invite offers for the mason, wright, plumber, plaster, glass, tile, fireproof flooring, cast-iron, steel, heating, lighting, and painting works required for the proposed new buildings at the Asylum, Castle-street. Schedules with conditions and full particulars may be obtained from Messrs. John Baird & Jas. Thomson, architects, 88, Bath-street, Glasgow, on payment of a deposit of 2*l.* 2s.

NO DATE.—**Hemsworth.**—CLUB BUILDINGS.—Erection and completion of athletic club buildings at Hemsworth Collieries, near Wakefield, for Messrs. The South Kirkby, Featherstone, and Hemsworth Collieries, Ltd. Bills of quantities, etc., may be obtained from Messrs. Garside & Pennington, architects, Pontefract and Castleford, on payment of 1*l.* 1s. deposit.

NO DATE.—**Hereford.**—VILLA.—Erection of a villa, Bodenham-road. Apply to Mr. W. W. Robinson, architect, Hereford.

NO DATE.—**Little Urswick.**—SHOP.—Erection of a shop at Little Urswick, for the Swarthmoor and Ulverston Co-operative Society, Ltd. Plans may be seen, and bills of quantities obtained, from the architects, Messrs. Settle & Brundrit, A.R.I.B.A., County-square, Ulverston.

NO DATE.—**Port Glasgow.**—HOUSES.—Schedules will shortly be issued for the building of about forty-five tenement houses in Port Glasgow. Firms wishing to offer, either for the whole work or for the mason, joiner, slater, plumber, or plaster work, apply by letter (giving references) to Mr. James Lithgow, Port Glasgow. Plans may be seen at the offices of Messrs. G. Arthur & Son, architects, 4, Graham-street, Airdrie; or Messrs. J. Dansken & Purdie, measurers, 241, West George-street, Glasgow.

NO DATE.—**Ulverston.**—HOUSE.—Erection of a house in Kilner's Park, Ulverston, for Mr. E. Smith. Plans may be seen, and bills of quantities obtained, from the architects, Messrs. Settle & Brundrit, A.R.I.B.A., County-square, Ulverston.

ENGINEERING, IRON, AND STEEL.

MAY 10.—**Bradford.**—WASHING MACHINE.—Steam rotary washing machine for the Bradford Union Workhouse. Specification on application to Mr. Fred Holland, Architect to the Board.

MAY 10.—**Madras.**—PENSTOCKS, VALVES, ETC.—Tenders for the supply and delivery at Madras of four penstocks, 5 ft. by 4 ft. opening; two Glenfield & Kennedy's 24-in. equilibrium ball valves, four 9-in. sluice valves, together with a few special pipe bends and castings, will be received by Messrs. James Mansergh & Sons, 5, Victoria-street, Westminster, S.W., as agents of the Corporation. Drawings can be seen, and copies of the specification, etc., obtained, at the offices of the agents upon the deposit of a cheque for 2*l.* 2s.

MAY 13.—**Slaithwaite.**—WROUGHT IRON, ETC.—Slaithwaite U.D.C. invite tenders for the wrought-iron and engineering work required in the equipment of a public abattoir at Slaithwaite. For particulars apply Mr. E. Gledhill, Clerk.

MAY 15.—**Pontypridd.**—HEATING.—Pontypridd Education Committee invite tenders for the installation of a low-pressure hot-water heating system in the Maesycoed Schools, Pontypridd (three departments), in accordance with the plans, etc., which may be seen at the office of the Engineer and Surveyor to the Council, Mr. W. E. Lowe.

MAY 15.—**Wexford.**—SLUICES.—Constructing a set of self-acting sluices in the South Slob Canal, Wexford, for the South Slob Maintenance Commissioners. Copies of plans, etc., can be obtained, on payment of 10s. 6d., from Mr. Edward S. O'Brien, B.E., M.Inst.C.E.I., Westown House, The Westgate, Wexford.

MAY 17.—**Broadwoodwidger.**—HEATING.—Grinacombe Moor United Methodist Church, Broadwoodwidger, invite tenders for heating with hot-water apparatus, and lighting by acetylene gas the above church. Conditions may be obtained from Mr. W. Veale, Goatacre, Broadwood.

MAY 17.—**Wigan.**—ELECTRICITY WORKS EXTENSION.—The Corporation invite tenders for the supply and erection of plant. Copies of the specifications, etc., may be obtained on application to Mr. James Slevin, Borough Electrical Engineer, Bradford-place, Wigan, on payment of 3*l.* 3s. for each specification. Drawings will be supplied at a cost of 10s. 6d. each, which sum will not be returned.

MAY 18.—**Abercarn and Maesteg, etc.**—FOOTBRIDGES.—The Directors of the Great Western Railway Company invite tenders for the erection of footbridges at Abercarn and Maesteg, and of sheds at Chippenham and Holt Junction respectively. Plans, etc., may be seen, and forms of tender, etc., obtained, at the office of the Engineer at Paddington Station, London, between the hours of 10 a.m. and 4 p.m.

MAY 18.—**Tralee.**—VIADUCT, ETC.—The Tralee and Fenit Pier and Harbour Commissioners invite tenders for the construction of a new timber viaduct and approaches thereto at Fenit Pier, county Kerry, in accordance with the plans, etc., prepared by their Engineer, Mr. G. A. E. Hickson, M.Inst.C.E.I. The plans, etc., can be inspected at the office of the said Harbour Board, Canal Office, Tralee, and at the Board of Works (Engineer's Department), No. 6, Upper Merrion-street, Dublin, between the hours of 9.30 a.m. and 4.30 p.m. A copy of specification, etc., will be sent to any person applying for same to the said Harbour Board, Canal Office, Tralee, upon payment of 1*l.* 1s.

MAY 19.—**Lytham.**—DREDGING.—The Corporation of Preston invite tenders for dredging operations in the north channel of the River Ribble at St. Annes-on-the-Sea between Lytham and the sea. Plans may be seen, and specification, etc., obtained, on application to Mr. G. N. Abernethy, M.Inst.C.E., Engineer to the St. Annes Council, 4, Delahay-street, Westminster, on payment of 2*l.* 2s.

MAY 20.—**Fazakerley.**—GAS LIGHTING.—West Derby Guardians invite tenders for laying gas mains, fitting of gas pipes in buildings, and the fixing of all fittings, to complete the lighting of the Cottage Homes for Children at Fazakerley. Samples of the gas fittings to be fixed can be seen at the Cottage Homes, and specifications obtained at the Union Offices, Brougham-terrace, Liverpool.

MAY 20.—**Northwold.**—HEATING.—Estimates are invited for heating Northwold Church on the radiator system. Estimates to be delivered to the Rev. J. S. Barber, Sycamore House, Northwold.

MAY 20.—**Seacombe, Wallasey.**—GASWORKS EXTENSIONS.—The Wallasey U.D.C. invite tenders for the construction, delivery, and erection complete of an iron or steel roof at the Gasworks, Dock-road, Seacombe, Cheshire. Plans may be inspected, and a copy of the specification obtained, on application to the Engineer, Mr. J. H. Crowther, at his office, Dock-road, Seacombe.

MAY 20.—**Seacombe.**—GASWORKS EXTENSIONS.—The Wallasey U.D.C. invite tenders for the construction of retort-house (except iron roof) at the Gasworks, Dock-road, Seacombe, Cheshire. Plans may be inspected, and a copy of the specification, etc., obtained, on application to the Engineer, Mr. J. H. Crowther, at his office, Dock-road, Seacombe, on payment of the sum of 2*l.* 2s.

MAY 24.—**Glasgow.**—MOTOR MACHINES.—The Corporation invite tenders for the supply of two petrol motor (compound pump and first aid) machines required for the Fire Department. Specifications, etc., may be had on application to Mr. Wm. Waddell, Chief Officer of the Fire Brigade, 33, Ingram-street.

MAY 31.—**Dublin.**—PLANT.—The Directors of the Great Northern Railway Company (Ireland) invite tenders for the providing and erecting of a stone-breaking plant at their Goraghwood quarry. A plan of the quarry ground and other particulars may be seen at the office of Mr. W. H. Mills, Engineer-in-Chief of the company, Amiens-street, Dublin.

NO DATE.—**Burslem.**—RAILWAY.—Constructing branch railway and sidings, comprising about 28,000 cubic yds. of excavating, and the laying down of about 3,500 yds. of chaired road. Plans may be inspected by appointment. Apply Sneyd Collieries, Ltd., Burslem.

MISCELLANEOUS.

MAY 8.—**Alnwick.**—STEAM ROLLER.—The R.D.C. of Alnwick invite tenders for hiring a steam road roller of 10 tons weight. Any further particulars may be had on application to the Highway Surveyor, Mr. James Short, Alnwick.

MAY 10.—**Cambridge.**—JARRAH WOOD BLOCKS.—The Council of the Borough of Cambridge invite tenders for the supply of 280,000 Jarrah wood blocks, 9 in. by 3 in. by 4 in. Further particulars may be obtained on application at the office of the Borough Surveyor, Guildhall, Cambridge.

MAY 10.—**Coppull.**—SCAVENGING.—The R.D.C. of Chorley invite tenders for the emptying of privies, ashpits, and cesspools in the Township of Coppull. Specification, etc., may be obtained from Mr. B. Stanton, Clerk, 14, High-street, Chorley.

MAY 10.—**Glasgow.**—AUTOMATIC FIRE ALARMS.—The May-Oatway desire tenders for installing their automatic fire alarms (four installations). Specifications and schedules can be seen at the Company's Glasgow Office, 49, Queen-street, between the hours of 11 and 12 o'clock daily.

MAY 15.—**Adlington.**—TEAM LABOUR.—The U.D.C. of Adlington invite tenders for team labour. Further particulars as to terms and conditions may be obtained from Mr. Robert Edge, at the Council Offices, Adlington.

MAY 15.—**Lavenham.**—SCAVENGING.—Cosford R.D.C. invite tenders for scavenging. Forms to be obtained at office of Mr. Alfred Newman, Clerk to the Council, Hadleigh.

MAY 15.—**Middleton.**—GAS MANTLES.—The Corporation of Middleton invite tenders for the supply of forty-five gross of mantles for street lighting. Further particulars and form of tender may be obtained on application to Superintendent Kempton, Fire Station, Middleton.

MAY 15.—**Spennymoor.**—DISINFECTANTS.—The Spennymoor U.D.C. invite tenders for the supplying of disinfectants for the seven months ending December 31, 1909. Particulars, etc., may be had on application to Mr. Arthur Dowdell, Inspector of Nuisances, Spennymoor.

MAY 19.—**Dublin.**—SLEEPERS.—Dublin and South-Eastern Railway Directors invite tenders for the supply of 30,000 rectangular sleepers. Specifications, etc., can be had on application to Mr. S. J. Shannon, Engineer, No. 1, Westland-row, Dublin.

MAY 21.—**Plymouth.**—MILLBAY BARRACKS IMPROVEMENT SCHEME.—For the supply and delivery of wrought-iron palisading and entrance gates for the boundaries in connexion with the above-mentioned scheme. Drawings, etc., may be seen at offices of Mr. James Paton, Borough Engineer and Surveyor, Municipal Offices, Plymouth.

PAINTING, etc.

MAY 10.—**Cambridge.**—PAINTING, ETC.—Tenders are invited by the Committee of Fulbourn Asylum, Cambridge, for outside painting and repairs. Bills of quantities, etc., may be obtained from the architect, Mr. A. P. MacAlister, F.R.I.B.A., 20, St. Andrew's-street, Cambridge, on payment of a deposit of 1*l.* 1s.

MAY 10.—**Nottingham.**—PAINTING.—Tenders are invited for painting, cleaning, and papering at the Training Institution, Hartley-road, Nottingham. Form of tender, etc., may be obtained at office of Mr. G. Muncaster Howard, Clerk to the Board, Poor Law Offices, Shakespeare-street, Nottingham.

MAY 10.—**Swindon.**—PAINTING, ETC.—The Education Committee of the Corporation invite tenders for asphalting and top-dressing playgrounds, alterations to firegrates, and painting and decorating at several schools. Specifications, etc., may be had, and further information obtained, from Mr. W. Seaton, Secretary to the Education Committee, Education Office, Town Hall, Swindon.

MAY 11.—**Guisborough.**—PAINTING.—The Guardians of the Guisborough Union invite tenders for the painting and whitewashing of the Workhouse and Infirmary. A specification of the works can be seen on application at the Workhouse or at office of Mr. W. Richardson, Clerk to the Guardians, Guisborough.

MAY 12.—**Barking Town.**—PAINTING.—The U.D.C. of Barking Town invite tenders for the painting of the bridge carrying the light railway over Barking Creek. Specification, etc., can be obtained on application to Mr. H. L. Howard, Electricity Works, East-street, Barking.

MAY 12.—**Leeds.**—PAINTING.—Painting at the City hospitals. Specifications and bills of quantities may be seen at the Steward's office, Seacroft Hospital.

MAY 12.—**Marwood (Devonshire) Council School.**—PAINTING.—The Managers invite tenders for repairing, painting, varnishing, distempering, etc., the above school, in accordance with specification, which may be seen at the school.

MAY 12.—**Rochdale.**—PAINTING.—The Guardians invite tenders for the outside painting of the whole of the woodwork and ironwork of all the blocks of buildings at the Workhouse, Dearnley. Specifications, etc., may be obtained at the Union Offices, Townhead.

* MAY 17.—**Leytonstone.**—PAINTING.—The Bethnal Green Board of Guardians invite tenders for painting a porton of the interior and exterior of their schools, High-road, Leytonstone. See advertisement in this issue for further particulars.

MAY 18.—**Bristol, Wootton Bassett, etc.**—PAINTING, ETC.—The Directors of the Great Western Railway Company invite tenders for cleaning and repainting stations, etc. (ten contracts). Specifications may be seen, and forms of tender, etc., obtained, at the office of the Engineer at Bristol for Contracts No. 1, 2, 3; at Neath for Contract No. 4; and at Wolverhampton for Contracts Nos. 5 to 10.

MAY 28.—**Bristol.**—PAINTING.—Bristol Electrical Committee invite tenders for (*a*) painting and tarring, Avonbank; (*b*) arc lamp globes; (*c*) clinkers, ashes, etc. Copies of the specifications (*a*) and (*b*) may be obtained from Mr. H. Faraday Proctor, City Electrical Engineer. City Electrical Engineer's Office, Temple Back, Bristol, on payment of a deposit of 2*l.* 2s.

NO DATE.—**Oldham.**—PAINTING, ETC.—Oldham Education Committee invite tenders for the painting and colouring of schools at Whitsuntide. Copies of specification may be obtained from Mr. J. Rennie, Secretary, Education Offices.

ROADS, SANITARY, AND WATER WORKS.

* MAY 7.—**Wandsworth.**—ROAD-MAKING AND PAVING.—The Wandsworth B.C. invite tenders for making-up and paving Bridgford-street, Springfield. See advertisement in this issue for further particulars.

MAY 8-14.—**Pateley Bridge.**—ADDITIONAL WATER SUPPLY.—Pateley Bridge R.D.C. invite tenders for the construction of a concrete covered service reservoir of about 90,000 gallons capacity, together with a line of 5-in. cast-iron pipe about 800 yds. in length. Plans, etc., can be inspected, and forms of tender, etc., obtained, from the engineers, Messrs. Edward Wilson Dixon & Ritchie, 3, East-parade, Leeds; or from Mr. Wm. Oddie, solicitor, Clerk, Pateley Bridge, Yorkshire. A deposit of 1*l.* 1s. will be required for the quantities.

MAY 10.—**Hessle.**—ROAD.—Tenders are invited for constructing additional roads on new estate, Hessle, for the Tranby Estates Company, Ltd. Quantities may be obtained from Mr. Ernest Whitlock, architect and surveyor, 26, Scale-lane, Hull.

MAY 10.—**Selby.**—BRAYTON WATER SUPPLY.—Selby

R.D.C. invite tenders for (1) supplying 2,312 yds. of 3-in. and 608 yds. of 2-in. cast-iron water pipes, etc.; (2) the excavating and refilling of trenches, the carting and laying of pipes; (3) fixing of hydrants, etc. Plans, etc., can be seen between three and five o'clock p.m. on each day except Saturday. Forms of tender to be obtained at the office of Mr. Thomas Braithwaite, Surveyor to the Council, Rose Cottage, Selby.

MAY 11.—**Bootle.**—STREET WORKS.—The Corporation of Bootle invite tenders for private street works. Plans, etc., may be seen at the Borough Engineer's office.

MAY 11.—**Edmonton.**—ASPHALTING.—Edmonton U.D.C. invite tenders for the supply and laying of asphalt 2 in. in thickness for 363 sq. yds. or more or less on Pickett's Lock Lane Bridge, also for 348 sq. yds. or more or less on Deepham's Farm Bridge. Forms of tender, etc., may be obtained on application to Mr. G. Eedes Eachus, M.Inst.C.E., Engineer to the Council, Town Hall, Edmonton.

MAY 11.—**Foleshill.**—SEWERAGE.—Foleshill R.D.C. invite tenders for the laying of a top sewer at Alderman's Green, Foleshill. Plan, etc., may be seen, and further information obtained, on application to Mr. A. E. Newey, Surveyor, Council Offices, Foleshill

* MAY 11. — **London, W.C.** — PAVING. — The Holborn B.C. invite tenders for (*a*) asphalt paving, Leather-lane; (*b*) tarred slag macadam paving of portion of Lincoln's Inn-fields. See advertisement in this issue for further particulars.

MAY 11.—**Radlett, Aldenham.**—DRAIN.—Watford R.D.C. invite tenders for the laying of about 140 yds. lin. of 9-in. surface-water drain in Aldenham-avenue, Radlett, together with one manhole and four gullies. Plans, etc., may be seen, and a copy of the quantities obtained, at the offices of the Surveyor to the Council, Mr. Ernest Lailey, 9, Market-street, Watford, on payment of a deposit of 1*l.* 1s.

MAY 12.—**Rochdale.**—ROAD WORKS.—The Corporation invite tenders for the paving and sewering, etc., work required in St. Martin's-street and Emma-street, Castleton, Rochdale. Plans, etc., may be seen, and copies of the quantities, etc., obtained, from the Borough Surveyor.

MAY 12. — **South Kirkby.** — ROAD MAKING. — The R.D.C. of Hemsworth invite tenders for the making of Faith-street, South Kirkby, according to plan, etc., which may be seen at the office of Mr. T. H. Richardson, in Hemsworth.

MAY 12. — **Twickenham.** — STREET WORKS. — Twickenham U.D.C. invite tenders for the works in connexion with forming, levelling, etc., of (1) Bonser-road, and (2) Holmes-road. Plans, etc., may be seen, and bills of quantities, etc., obtained, on application at the office of Mr. Fred W. Pearce, F.S.I., Surveyor to the Council, Town Hall, Twickenham, and the payment at office of Mr. H. Jason Saunders, Clerk to the Council, Town Hall, Twickenham, of a deposit of 1*l.* 1s.

MAY 13.—**Edinburgh.**—PAVING.—Edinburgh Corporation invite tenders for granolithic foot paving, etc. Schedules, etc., may be obtained on application to the City Road Surveyor, City Chambers.

MAY 13.—**Gosport.**—PAVING.—Gosport and Alverstoke U.D.C. invite tenders for the paving of part of North-street, in continuation of the granited asphalt; also for paving the footways of Anglesey and Foster roads with granolithic paving slabs. Specifications may be obtained at the Surveyor's Office, Town Hall, Gosport, on payment of a deposit of 1*l.* 1s.

MAY 13. — **Oldham.** — STREET WORKS. — The Surveyor's Committee invite tenders for the sewering, paving, and completing of passages, etc. Plans, etc., can be seen, and quantities and forms of tender obtained, at the office of the Borough Surveyor.

MAY 14. — **Ashton.** — ROAD WORKS.—Preston Corporation invite tenders for the works required in levelling, paving, flagging, etc., and making good Tomlinson-road, Ashton. Plan, etc., may be seen, and schedule of quantities, etc., obtained, at the office of the Borough Surveyor, Town Hall, Preston.

MAY 17.—**Leith.**—DRAINAGE.—The Water of Leith Purification and Sewerage Commissioners invite tenders for the following works, viz.:—(1) The construction of surface-water drains in Juniper Green; (2) the construction of surface-water drains in Colinton; (3) the construction of recorder well and sewer at Legget's Skinnery, Water of Leith Village. Plans may be seen, and copies of the specifications, etc., obtained, at the office of the Commissioners' Engineer, 16, Queen-street, Edinburgh. Intending offerers will require to deposit 1*l.*

MAY 19.—**Clacton.**—MAKING-UP.—Clacton U.D.C. invite tenders for making-up the road known as Pier Gap in the District of Clacton. The drawings, etc., may be seen, and copies of the quantities obtained, upon application to Mr. A. R. Robinson, Surveyor to the Council, Town Hall, Clacton-on-Sea. The sum of 1*l.* 1s. will be charged for the quantities.

MAY 26. — **Wood Green.** — STREET WORKS. — The U.D.C. of Wood Green invite tenders for the making-up of:—(1) Dukes-avenue (from the Parish boundary to Grove-avenue); and (2) Wellesley-road. The plans, etc., may be seen, and bills of quantities obtained, on application to the Surveyor at the Town Hall, Wood Green, upon payment to Mr. Wm. P. Harding, Clerk of the Council, Town Hall, Wood Green, of a deposit of 1*l.* 1s.

NO DATE.—**Tamworth.**—PRIVATE STREET WORKS.—The Corporation invite tenders for sewering, levelling, metalling, paving, and channelling Croft-street. Drawing can be seen, and specification obtained at the office of Mr. F. E. G. Bradshaw, Borough Surveyor, Municipal Offices, Tamworth.

STONES, MATERIAL, AND STORES.

MAY 10.—**Reigate.**—MATERIALS, ETC.—The Council of the Borough of Reigate invite tenders for the supply of materials and for the execution of works. Specifications may be seen, and forms of tender obtained, upon application to Mr. Fred T. Clayton, the Borough Surveyor, and every person tendering will be required to deposit at his office, at the Municipal Buildings, Reigate, a sample of the materials for which he tenders.

MAY 11.—**Hetton.**—ROAD MATERIAL.—The U.D.C. of Hetton invite tenders for supplying road materials. Further particulars, together with form of tender, may be obtained from the Surveyor of the Council, Mr. John Harding, Township Offices, Hetton-le-Hole, S.O.

MAY 11.—**London.**—TOOLS, ETC.—Bombay, Baroda, and Central India Railway Directors invite tenders for the supply of miscellaneous tools and stores. Tenders must be made on forms, etc., to be obtained at offices, Gloucester House, 2, 3, and 4, Bishopsgate-street Without, London, E.C., on payment of 1*l.* 1s. each (which will not be returned).

MAY 11.—**Manchester.**—PIPES.—Manchester Corporation Waterworks Committee invite tenders for the supply of about 18,500 tons of cast-iron pipes and special castings, 40 in. diameter. Specification, etc., may be obtained on application to Messrs. G. H. Hill & Sons, civil engineers, Albert-chambers, Albert-square, Manchester, and 3, Victoria-street, Westminster, upon receipt of cheque for 2*l.* 2s.

MAY 11.—**Tendring.**—FLINTS.—Tendring R.D.C. invite tenders for granite and flints. There are no forms of tender supplied. Mr. A. J. H. Ward, Clerk to the Council, 42, Church-street, Harwich.

MAY 12.—**Baildon.**—GRANITE.—The Baildon U.D.C. invite tenders for the supply of 800 tons of 2½-in. broken granite, to Baildon and Shipley Stations. No special form required. Mr. J. Bentley, Clerk to the Council, Council Offices, Baildon.

MAY 12. — **Nantwich.** — MATERIALS. — Nantwich U.D.C. invite tenders for supply and delivery of materials. Separate prices per ton to be quoted, and samples to be sent to Mr. W. F. Newey, C.E., the Council's Surveyor.

MAY 15. — **Frodingham.** — WHINSTONE.—Brumby and Frodingham U.D.C. invite tenders for about 400 tons of whinstone, to be delivered at Gunness and Frodingham Stations, G.C.R. Specifications, etc., may be had from Mr. Joe Green, Surveyor, Council Offices, New Frodingham, Doncaster.

MAY 15. — **Hoyland.** — SUPPLIES.—Hoyland Nether U.D.C. invite tenders for the supply and delivery of road material for the year. Full particulars and form of tender may be obtained on application at office of Mr. Frank Hewitt, Engineer and Surveyor, Town Hall, Hoyland.

MAY 15.—**Southborough.**—STONE.—Southborough U.D.C. invite tenders for the supply of about 600 tons (more or less) of quartzite, basalt, granite, or other suitable stone. Forms of tender, etc., may be obtained upon application. Mr. Philip Hanmer, Clerk to Council, Council Offices, Southborough.

MAY 17.—**Ham.**—MATERIALS.—Ham U.D.C. invite tenders for materials, etc. Further particulars may be obtained on application to the Surveyor of the Council, Mr. R. W. Hindhaugh, the Council Offices, Lock-road, Ham.

MAY 17. — **Hexham.** — DISINFECTANTS. — Hexham R.D.C. invite tenders for the supply of disinfectants, etc. Forms of tender may be obtained from Mr. J. H. Nicholson, Clerk. Office, Midland Bank-chambers, Hexham.

MAY 17.—**Manchester.** — MATERIALS.—Manchester Corporation Rivers Committee invite tenders for materials. Specifications, etc., may be obtained on application to the Secretary of the Rivers Department, Town Hall.

MAY 17. — **Newcastle-upon-Tyne.** — GRANITE COPING FOR QUAY EXTENSION WORKS.—Tenders are invited for the supply and delivery of about 3,325 cubic ft. of granite coping. Specification, etc., may be obtained at the City Engineer's Office, Town Hall, Newcastle-on-Tyne.

MAY 18.—**London.**—ROAD STONE.—Great Western Railway Directors invite tenders for the supply of machine-broken road stone and stone chippings. Conditions of contract and forms of tender may be obtained on application to Mr. G. K. Mill's, Secretary, Paddington Station, London.

MAY 19. — **Wallasey.**—STORES. — The Works Committee of the Wallasey U.D.C. invite tenders for the supply of materials. Further particulars, etc., may be obtained on application at the office of Mr. W. H. Travers, A.M.Inst.C.E., District Engineer and Surveyor, Public Offices, Egremont, Cheshire.

MAY 20.—**Chatham.**—MATERIALS.—The T.C. of the Borough of Chatham invite tenders for the supply of broken granite or other hard stone for macadam, surface-picked flints, Jarrah wood blocks. Specification, etc., can be obtained on application at the Borough Surveyor's Office, Town Hall, Chatham.

MAY 27.—**Ashford.**—ROAD METAL.—Ashford U.D.C. invite tenders for 1,160 cubic yds. (more or less) of 2-in. gauge broken granite, as per form of tender, to be obtained from Mr. William Terrill, Surveyor, at his office, 5, North-street, Ashford, Kent.

NO DATE. — **Ystradowen.**—SAND, ETC.—Tenders wanted for sand and broken stone to pass ¾-in. and 2-in. ring for concrete, delivered Ystradowen Colliery, Gwys, M.R. Messrs. Nichols & Reynolds, Ltd., King's-court, Broadway, Westminster.

Public Appointments.

Nature of Appointment.	By whom Advertised.	Salary.	Application to be in
*CLERK OF WORKS	Enfield Education Committee	3*l.* 3s. per week	May 15
*INSTRUCTOR IN HANDICRAFT (WOODWORK)	London County Council	100*l.* per annum	do.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*TIMBER, LUDGATE-HILL, E.C.—On the Premises	Benjamin Norman & Son	May 12
*DEALS, BATTENS, ETC.—Great Hall, Winchester House, Old Broad-street, E.C.	Churchill & Sim	do.
*CONTRACTOR'S PLANT, BARGES AND MATERIALS, BATTERSEA—On the Premises	Wheatley Kirk, Price, & Co.	May 18
*FREEHOLD ESTATE, HENDON—At the Mart	Rushworth & Brown	May 19
*FREEHOLD ESTATE, HOUNSLOW—At the Mart	Rushworth & Brown	do.
*FREEHOLD SITE, WHITECHAPEL-ROAD, E.C.—At the Mart	Rushworth & Brown	do.
*IRONMONGER, GLASS, LEAD, ETC., MERCHANT'S STK., UXBRIDGE—On the Premises	H. W. Smith	do.
*FREEHOLD ESTATE, CARSHALTON—At the Mart	Messrs. Kemsley	June 7
*FREEHOLD AND LEASEHOLD PROPERTIES, VARIOUS—At the Mart	Debenham, Tewson, Richardson, & Co.	June 8
*FREEHOLD PROPERTY, STRAND—At the Mart	Farebrother, Ellis, & Co.	June 10

LAW REPORTS.—*Continued from page 565.*

will give the plaintiffs the injunction, or, in the exercise of my discretion, damages?

Mr. Romer said that was so. He thought it would be well if his lordship would go and see the premises in question.

Mr. Hamilton hoped his lordship would do so.

His lordship remarked that if he did so he should probably make up his own mind about the matter, quite apart from the evidence.

Mr. Romer, in reply to his lordship, said that the total rent which the plaintiffs paid for their premises was 425*l.* per annum.

Mr. Hamilton said his case was that the plaintiffs knew of what was being done by the defendants as far back as January, 1907, or certainly as far back as June, 1907, because plans were shown to them.

Mr. Romer said that if plans were shown to plaintiffs they did not understand them.

Evidence was then called in support of the plaintiffs' case.

At the close of the plaintiffs' case Mr. Hamilton said he should call his witnesses before addressing his lordship. The learned counsel then proceeded to call expert evidence for the purpose of showing that the alteration to the light made by the defendants in the erection of the bridges had not materially affected the comfortable user of the plaintiffs' rooms. It was admitted that the putting up of the balconies immediately over the plaintiffs' western windows did interfere with their right to light, but inasmuch as that interference only lasted between eight and nine months, it was

said that the sum of 50*l.* was ample compensation for the temporary inconvenience the plaintiffs had suffered. It was also admitted that if the glass of the bridges was kept dirty there would be an appreciable diminution of the light coming to the plaintiffs' windows.

Mr. Hamilton, in addressing his lordship on behalf of the defendants, contended that the plaintiffs' case had been greatly exaggerated, and said that their rooms must have always been considerably darkened by having a building 50 ft. or 60 ft. high opposite. He submitted that the plaintiffs were not entitled to any more light than was reflected from the wall opposite at the time when the grant was made, and that the diminution of light was so small as not to amount to a nuisance. If his lordship should be against him on that point, then he submitted the plaintiffs were not entitled to a mandatory injunction upon the ground that if there was an actionable wrong the damage was so small compared with the damage the defendants would suffer by having to pull down the erections complained of.

His lordship: My present opinion is that I should not grant a mandatory injunction, and that I might give damages only. Are you prepared in mitigation of damages to give an undertaking to keep the wall white and the glass clean?

Mr. Hamilton said that defendants were willing to undertake to clean the glass of the structures every fortnight, and to do the necessary painting every two years.

His lordship said he only wished to hear Mr. Romer in reply upon the point as to whether a case had been made out for an injunction.

Mr. Romer then contended that the plaintiffs were entitled to an injunction, as it would really be no great hardship on the defendants to have to remove what the plaintiffs complained of.

His lordship, in giving judgment, said he found as a fact that the obstruction of light caused by the bridges and their roofs was of such a nature that the plaintiffs' west room, lavatory, and lobby were materially less suitable and convenient for use as offices, whatever the business, than they would be but for such obstruction. In other words, he found that the obstruction was such as to create a nuisance within the words used in the recent decisions on the ancient light question. He further found as a fact that the obstruction decreased the money value of the plaintiffs' suite of offices, of which they were tenants. He had come to that conclusion both on the evidence and after a personal investigation of the *locus in quo*. In his opinion the plaintiffs had made out their cause of action, and the only question was whether he should award an injunction involving the removal of the erections, or whether he could properly give damages in lieu of an injunction. He had come to the conclusion that this was a case in which he could give damages, and ought to give damages in lieu of an injunction. On the whole, having regard to the fact that the plaintiffs' interest was a leasehold interest, he awarded the plaintiffs the sum of 335*l.* and costs. In respect of the balconies he awarded the plaintiffs 20*l.*

Judgment was accordingly entered for the plaintiffs for 355*l.* and costs.

Patents.

APPLICATIONS PUBLISHED.*

4,952 of 1908.—Henry Jocelyn Davison: Windows.

8,086 of 1908.—Noel Pemberton Billing: Hand operated latches for doors and the like.

8,523 of 1908.—Heinrich Wilhelm Oberlies: Reinforced concrete pole or mast supporting electric conductors or for other purposes.

21,353 of 1908.—Arnold Ludwig Hoffmann: Keys for doors and other locks.

7,590 of 1908.—Charles Marius Jean Roch and L. G. Mouchel & Partners, Ltd.: Building of walls and other like structures of bricks, tiles, or slabs.

7,504 of 1908.—William Patrick Sanderson: Attachment for holding doors in any position.

11,284 of 1908.—Alfred Ferguson: Means for connecting lead with iron or other hard pipes.

11,422 of 1908.—James Ford: Furnaces for heating steel, iron, and other metallic rods.

16,376 of 1908.—Thomas Prince: Kilns for the burning or drying of bricks, tiles, or other similar goods.

13,645 of 1908.—John Phillips: Rope or cable grips for haulage purposes.

21,180 of 1908.—John Peart: Glazing devices.

25,407 of 1908.—John Brown and Henry Newman Brown: Clamp for holding pipes, rods, and the like.

*All these applications are in the stage in which opposition to the grant of patents upon them can be made.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

April 22.—By BRADY & SON (at Crewe).

Audlem, Cheshire.—Coole Hall Farm, 163 a. 2 r., f. £5,800

By ROBT. NEWMAN (at Uxbridge).

Ickenham, Middx.—Ruislip-rd., freehold shop, y.r. 18*l.* 235
Hillingdon, Middx.—Harlington-rd., The Hollies and Lime Cottage, f., e.r. 51*l.* 18s. 700
Uxbridge-rd., two freehold cottages, w.r. 33*l.* 16s. 435
Colham Green, Holly Cottage, f., w.r. 18*l.* 4s. 230
Hayes, Middx.—Uxbridge-rd., three freehold cottages, w.r. 36*l.* 8s. 250
Uxbridge, Middx.—Waterloo-rd., The Waterloo Arms, b.h., f., y.r. 20*l.* 400

April 24.—By WILLIAM F. BEAVAN (at Chester).

Bylchau, Denbigh.—Hafod Cefn Plas Onn Estate, 1,969 a., 2 r. 23 p., f. 14,050

April 26.—By JOHN BOTT & SONS.

Dulwich.—45, Rosendale-rd., u.t. 71 yrs., g.r. 7*l.* 10s., p. 240

By JONES, LANG, & CO.

City.—128A and 130, Queen Victoria-st. (s. and offices), u.t. 44 yrs., g.r. 533*l.*, gross rental 1,679*l.* 6,500
Kingsland.—98, Downham-rd., u.t. 10 yrs., g.r. 1*l.*, y.r. 25*l.* 130

By T. B. WESTACOTT.

Hampstead.—67, Constantine-rd., u.t. 85 yrs., g.r. 7*l.*, e.r. 45*l.* 470

By T. WOODS.

Hounslow.—Wellington-rd. South, Brompton Cottage, stabling and 1 a. 3 r. 30 p., f., y.r. 50*l.* 660

By WALLER & KING (at Southampton).

Southampton.—148, Millbrook-rd., f. p. 805
171, Millbrook-rd., f. y.r. 22*l.* 425
18 and 19, Blechynden-ter., f., y.r. 44*l.* 640
Moor Green, Hants.—Freehold bungalow, two cottages and 1 acre, y.r. 19*l.* 11s. 210

By AUSTIN & WYATT (at Edenbridge).

Edenbridge, Kent.—Freehold building and accommodation land, 68 a. 0 r. 26 p. (in lots) 3,697

By WILKINSON, SON, & WELCH (at Brighton).

Brighton.—7, Sudeley-pl., f., y.r. 35*l.* 350
58, Upper Russell-st. (s.), f., y.r. 80*l.* 340

April 27.—By WALTON & LEE.

Clifton-upon-Dunsmore, Warwick.—Dunsmore estate, 461a. 2r. 39p., f., p. 30,000

By FREDERICK WARMAN.

Highbury.—67, Highbury New-pk., u.t. 40½ yrs., g.r. 15*l.*, p. 555
Islington.—27, Clarence-st., f., y.r. 40*l.* 450
St. Pancras.—7, 7A, 8 and 9, Gee-st., 19 to 24, Clarendon-pl., u.t. 18 yrs., g.r. 60*l.*, y. and e.r. 281*l.* 335
Wood Green.—218, Westbury-av., u.t. 99 yrs., g.r. 6*l.* 6s., e.r. 32*l.* 305

By WESTON & SONS.

Brixton.—75 to 83 (odd), Gresham-rd.; 102 and 104, Barrington-rd. (shops and flats), f., gross rentals 321*l.* 2,350
Clapham.—54, Kimberley-rd., u.t. 82 yrs., g.r. 7*l.* 10s., e.r. 42*l.* 345
Brixton.—217.—Milkwood-rd., u.t. 57 yrs., g.r. 6*l.*, e.r. 32*l.* 145

By W. M. STICKNEY & SON (at Hull).

Out Newton, Yorks.—Freehold farm, 133 acres 1,970

By GEO. LOVEITT & SONS (at Coventry).

Coventry, Warwick.—3 and 5, Middleborough-rd., f., y.r. 71*l.* 1,000
Eaton-rd., Sylvadale, u.t. 83 yrs., g.r. 11*l.* 12s. 6d., p. 1,000
Raglan-st., Raglan Tavern, f. 1,875
26, 28, and 30, Raglan-st., and 14, Alma-st., f., gross rents 53*l.* 6s. 750

April 28.—By A. G. BONSOR.

Kingston-on-Thames.—16, Market-pl., (s.), f., y.r. 100*l.* 1,900
New Malden.—Chestnut-gr., Chestnut House, f., p. 1,200

By SKELDING & HOLLAND.

Notting Hill.—203, Portobello-rd., (s.), u.t. 51½ yrs., g.r. 8*l.*, y.r. 65*l.* 450
Paddington.—35, Hethpool-st., u.t. 29 yrs., g.r. 7*l.* 7s., w.r. 55*l.* 18s. 185

By FRED VARLEY & SON.

Finsbury Park.—19, Gloucester-rd., u.t. 50 yrs., g.r. 16*l.* 16s., e.r. 65*l.* 525
32, Gloucester-rd., u.t. 50 yrs., g.r. 12*l.* 12s., e.r. 65*l.* 650

By DOUGLAS YOUNG.

St. Albans.—London-rd., Grosvenor House, f., e.r. 60*l.* 850
Hockley, Essex.—The Hockley Brickfields, 29 a. 0 r. 32 p., f. 1,000
Part of Lynes Farm, 33 a. 1 r. 10 p., f. 630
Pooles-la., ten freehold cottages 510
Rayleigh, Essex.—Hambro Hill, freehold land 7 a. 0 r. 31 p. 200

By F. W. HUNTON & SON (at Bracknell).

Easthampstead, Berks.—Binfield-rd., freehold building land, 18 a. 3 r. 24 p. 1,080
Skimpidhill-rd., freehold accommodation land, 8 a. 1 r. 27 p. 180

By MILLER & ABBOTTS (at Adderbury).

Adderbury East, Oxon.—Enclosure of arable land, 14 a. 2 r., f. 670

April 29.—By GEO. BILLINGS.

Clapton.—12 and 14, Oakfield-rd., u.t. 53 yrs., g.r. 8*l.*, y.r. 68*l.* 955
Poplar.—17, Plimsoll-st., u.t. 45 yrs., g.r. 3*l.*, w.r. 35*l.* 2s. 190
10, Clutton-st., f., w.r. 22*l.* 2s. 135
Hackney.—309 and 311, Mare-st. (s.), u.t. 9 yrs., at rental of 108*l.*, y.r. 200*l.* 200

By BISLEY & SONS.

Bermondsey.—47, Abbey-st. (s.), f., w.r. 31*l.* 4s. 17, Lynton-rd., u.t. 25¼ yrs., g.r. 5*l.*, w.r. 41*l.* 12s. 400
Tottenham.—Ipplepen-rd., f.g.r. 8*l.* 8s., reversion in 69½ yrs. 150
190

By JOHN G. DEAN & CO.

Balham.—19, Nottingham-rd., f., e.r. 38*l.* £460
Croydon.—64, 66, 68, and 70, Oval-rd., f., w.r. 124*l.* 16s. 1,090
Battersea.—135 and 137, Bridge-rd. West, f. w.r. 54*l.* 12s. 425

By DYER, SON, & HILTON.

Catford.—Rushey Green, a freehold building plot 860
Kentish Town.—73, Falkland-rd., u.t. 49 yrs., g.r. 8*l.*, y.r. 38*l.* 290
23 and 25, Healey-st., u.t. 51 yrs., g.r. 14*l.*, y.r. 76*l.* 545

By C. C. & T. MOORE.

Mile End.—1 and 3, Maritime-st., u.t. 53¼ yrs., g.r. 10*l.*, w.r. 72*l.* 16s. 380
22, Burdett-rd., u.t. 38 yrs., g.r. 6*l.*, e.r. 40*l.* .. 250
Poplar.—32 and 34, Ullin-st., u.t. 56 yrs., g.r. 5*l.* 5s., w.r. 72*l.* 16s. 450

By STIMSON & SONS.

North Woolwich.—37 to 51, Elizabeth-st.; 4 to 19, Wiseman-st.; 3 and 3A, Station-st., f., w.r. 305*l.* 16s. (including mortgage) 4,072
1 to 9, Fernhill-st., f., w.r. 258*l.* 14s. 1,620
157 and 159, Elizabeth-st., f., w.r. 57*l.* 4s. 360
Albert-rd., four freehold plots 100
Silvertown.—14 to 36 (even), Newland-st. (12 flats), f., w.r. 201*l.* 1 s. 950
Muir-st., l.g.r. 27*l.*, u.t. 64¼ yrs., g.r. 18*l.* 100
Peckham.—23 to 33 (odd), Bell's Garden-rd., u.t. 53¾ yrs., g.r. 10*l.*, w.r. 187*l.* 4s. 690
Clapham.—32, Kingswood-rd., u.t. 72 yrs., g.r. 6*l.* 15s., y.r. 36*l.* 270
Kennington.—349, Kennington-rd. (s.), u.t. 22 yrs., g.r. 13*l.* (rising to 14*l.*), y.r. 53*l.* 290
Peckham.—13, Fendick-rd., u.t. 55 yrs., g.r. 5*l.*, w.r. 36*l.* 190
Battersea.—46, Webbs-rd. (s.), u.t. 80 yrs., g.r. 8*l.*, y.r. 35*l.* 250

By GRIMLEY & SON (at Birmingham).

Edgbaston, Warwick.—Somerset-rd., Beechurst and 2 a. 1 r. 10 p., u.t. 52 yrs., g.r. 40*l.* 5s.. 1,900
Birmingham, Warwick.—55, 57, and 59, Gooch-st., u.t. 58 yrs., g.r. 8*l.* 13s. 7½d., w.r. 97*l.* 10s. 475
King's Heath, Worcester.—Alcester-rd., Heathfield Cottage and 7¼ acres, f., y.r. 70*l.* 3,150
Moseley, Worcester.—Alcester-rd., f.g.r. 300*l.*, reversion in 88 yrs 8,200
f.g.r. 17*l.* 11s., reversion in 57 yrs. 485
34 and 36, St. Mary's-row (s.), f., y.r. 90*l.* 1,700

By G. B. HILLIARD & SON (at Bishop's Stortford).

High Wych, Herts.—Six freehold cottages, gross rents 39*l.* 1,045

April 30.—By ARTHUR ALDRIDGE & CO.

Kennington.—63, Cooks-rd., u.t. 41 yrs., g.r. 6*l.*, e.r. 35*l.* 240

By PERCY W. CLEAVE.

Limehouse.—10, West India Dock-rd. (s.), u.t. 21¼ yrs., g.r. 5*l.*, e.r. 45*l.* 160
Poplar.—282, High-st. (s.) f., e.r. 32*l.* 250
11 and 13, East India Dock-rd. (s.), u.t. 11 yrs., g.r. 1*l.* 10s., y.r. 60*l.* 15s. 150
244, St. Leonard's-rd. (s.), u.t. 60 yrs., g.r. 2*l.* 15s., w.r. 32*l.* 10s. 150
95, Venue-st., u.t. 60 yrs., g.r. 1*l.*, w.r. 33*l.* 16s. 185
Mottingham, Kent.—9 and 10, Clarence-rd., u.t. 93 yrs., g.r. 13*l.*, y.r. 60*l.* 300

By L. T. SNELL & CO.

Maida Vale.—14, Randolph-rd., u.t. 39½ yrs., g.r. 10*l.*, e.r. 80*l.* 600
Regent's Park.—32, Redhill-st. (s.), u.t. 18 yrs., g.r. 15*l.*, y.r. 50*l.* 225

By WILSON & GRAY.

Hackney.—402 and 404, Mare-st. (s.), u.t. 45 yrs., g.r. 30*l.*, y.r. 195*l.* 1,865
408, Mare-st. (s.), u.t. 38 yrs., g.r. nil, y.r. 90*l.* 900
Clapton.—34 and 36, Lea Bridge-rd., f., y.r. 72*l.* 825

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£	s.	d.			
Best Stocks	1	6	6	per 1000	alongside, in river.	
Picked Stocks for Facings	2	10	0	,,	delivered	
Flettons	1	4	6	,,	at railway depôt.	
Best Fareham Red	3	12	0	,,	,,	,,
Best Red Pressed Ruabon Facing..	5	0	0	,,	,,	,,
Best Blue Pressed Staffordshire ...	3	15	0	,,	,,	,,
Do. Bullnose	4	0	0	,,	,,	,,
Best Stourbridge Fire Bricks	3	14	0	,,	,,	,,
GLAZED BRICKS.						
Best White and Ivory Glazed Stretchers.....	10	7	6	,,	,,	,,
Headers	9	17	6	,,	,,	,,
Quoins, Bullnose, and Flats	13	17	6	,,	,,	,,
Double Stretchers	15	17	6	,,	,,	,,
Double Headers...	12	17	6	,,	,,	,,
One Side and two Ends	16	17	6	,,	,,	,,
Two Sides and one End.....	17	17	6	,,	,,	,,

BRICKS, &c. (*continued*).

GLAZED BRICKS (*continued*)—

	£	s.	d.	
Splays and Squints	15	7	6	per 1000, deld. at rly. depôt.
Best Dipped Salt Glazed Stretchers	10	7	6	" " "
Headers	9	17	6	" " "
Quoins, Bullnose, and Flats	13	17	6	" " "
Double Stretchers	15	17	6	" " "
Double Headers	12	17	6	" " "
One Side and two Ends	16	17	6	" " "
Two Sides and one End	17	17	6	" " "
Splays and Squints	15	7	6	" " "
Second Quality White and Dipped Salt Glazed	1	5	0	" less than best.

	s.	d.	
Thames and Pit Sand	6	6	per yard, delivered.
Thames Ballast	5	0	" "
Best Portland Cement	28	0	per ton, "
Best Ground Blue Lias Lime	19	0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime	11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks	27s. 0d. per ton at rly. dpt.

STONE.

	s.	d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1	6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1	8½	" "
PORTLAND STONE (20 ft average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2	2½	" "

	s.	d.	
Ancester in blocks	1	10	per ft. cube. deld. rly. depôt.
Beer "	1	6	" "
Greenshill "	1	10	" "
Darley Dale in blocks	2	4	" "
Red Corsehill "	2	2	" "
Closeburn Ree Freestone	2	0	" "
Red Mansfield "	2	4	" "

YORK STONE—*Robin Hood Quality.*

	s.	d.	
Scappled random blocks	2	10	per ft. cube, deld. rly. dep.
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2	6	" "
3 in. sawn two sides slabs (random sizes)	0	11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0	7½	" "
1½ in. to 2 in. ditto, ditto	0	6	" "
HARD YORK—			
Scappled random blocks	3	0	per ft. cube "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2	8	per ft. super. "
6 in. rubbed two sides ditto	3	0	" "
3 in. sawn two sides slabs (random sizes)	1	2	" "
2 in. self-faced random flags	0	5	" "

SLATES.

In. In.	£	s.	d.	
20×10 best blue Bangor	13	2	6	per 1000 of 1200 at r.d.
20×12 " "	13	17	6	" "
20×10 first quality "	13	0	0	" "
20×12 " "	13	15	0	" "
16×8 " "	7	5	0	" "
22×10 best blue Portmadoc	12	12	6	" "
16×8 " "	6	12	6	" "
20×10 best Eureka unfading green	15	17	6	" "
20×12 " "	18	7	6	" "
18×10 " "	13	5	0	" "
16×8 " "	10	5	0	" "
20×10 permanent green	11	12	6	" "
18×10 " "	9	12	6	" "
16×8 " "	6	12	6	" "

TILES.

	s.	d.	
Best plain red roofing tiles	42	0	per 1000, at rly depôt.
Hip and Valley tiles	3	7	per doz. "
Best Broseley tiles	50	0	per 1000 "
Do. Ornamental tiles	52	6	" "
Hip and Valley tiles	4	0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57	6	per 1000 "
Do. Ornamental do.	60	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51	9	per 1000 "
Do. Ornamental do.	54	6	" "
Hip tiles	4	1	per doz. "
Valley tiles	3	8	" "
Best "Rosemary" brand plain tiles	48	0	per 1000 "
Best Ornamental tiles	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	8	" "
Best "Hartshill" brand plain tiles, sand-faced	50	0	per 1000 "
Do. pressed	47	6	" "
Do. Ornamental do.	50	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "
Staffordshire (Hanley) Reds or Brindled tiles	42	6	per 1000 "
Hand-made sand-faced	45	0	" "
Hip tiles	4	0	per doz. "
Valley tiles	3	6	" "

WOOD.

BUILDING WOOD.	£	s.	d.	£	s.	d.	At per standard.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13	10	0	15	0	0	
Deals: best 3 by 9	13	0	0	14	0	0	
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11	0	0	12	0	0	
Battens: best 2½ by 6 and 3 by 6	0	10	0	less than 7 in. and 8 in.			
Deals: seconds	1	0	0	less than best.			
Battens: seconds	0	10	0				"
2 in. by 4 in. and 2 in. by 6in	9	0	0	10	0	0	
2 in. by 4½ in. and 2 in. by 5 in.	8	10	0	9	10	0	
Foreign Sawn Boards—							
1 in. and 1¼ in. by 7 in.	0	10	0	more than battens.			
¾ in.	1	0	0				"

	At per load of 50 ft.					
Fir timber: best middling Danzig or Memel (average specification)	£	s.	d.	£	s.	d.
	4	10	0	5	0	0
Seconds	4	0	0	4	10	0
Small timber (8 in. to 10 in.)	3	12	6	3	15	0
Small timber (6 in. to 8 in.)	3	0	0	3	10	0
Swedish balks	2	10	0	3	0	0
Pitch-pine timber (30 ft. average)	4	0	0	4	15	0

JOINERS' WOOD.	£	s.	d.	£	s.	d.	At per standard.
White Sea: first yellow deals, 3 in. by 11 in.	24	0	0	25	0	0	
3 in. by 9 in.	22	0	0	23	0	0	
Batten 2½ in. and 3 in. by 7 in.	16	10	0	18	0	0	
White Sea: second yellow deals, 3 in. by 1 in.	18	10	0	20	0	0	
3 in. by 9 in.	17	10	0	19	0	0	
Battens, 2½ in. and 3 in. by 7 in.	13	10	0	14	10	0	
Third yellow deals, 3 in. by 11 in. and 9 in.	13	10	0	15	0	0	
Battens, 2½ in. and 3 in. by 7 in.	11	0	0	12	0	0	
Petersburg first yellow deals, 3 in. by 11 in.	21	0	0	22	10	0	
Do. 3 in. by 9 in.	18	0	0	19	10	0	
Battens	13	10	0	15	0	0	
Petersburg second yellow deals, 3 in. by 11 in.	16	0	0	17	0	0	
Do. 3 in. by 9 in.	14	10	0	16	0	0	
Battens	11	0	0	12	10	0	
Third yellow deals 3 in. by 11 in.	13	0	0	14	0	0	
Do. 3 in. by 9 in.	12	10	0	14	0	0	
Battens	10	0	0	11	0	0	
White Sea and Petersburg—							
First white deals, 3 in. by 11 in.	14	10	0	15	10	0	
" " 3 in. by 9 in.	13	10	0	14	0	0	
Battens	11	0	0	12	0	0	
Second white deals, 3 in. by 11 in.	13	10	0	14	10	0	
" " 3 in. by 9 in.	12	10	0	13	10	0	
Battens	10	0	0	11	0	0	
Pitch-pine: deals	18	0	0	21	0	0	
Under 2 in. thick extra	0	10	0	1	0	0	
Yellow pine—First, regular sizes	44	0	0	upwards.			
Oddments	32	0	0	"			
Seconds, regular sizes	33	0	0	"			
Oddments	28	0	0	"			
Kauri Pine—Planks, per ft. cube	0	3	6	0	5	0	
Danzig and Stettin Oak logs— Large, per ft. cube	0	3	0	0	3	9	
Small " "	0	2	6	0	2	6	
Wainscot Oak Logs, per ft. cube	0	5	6	0	6	0	
Dry Wainscot Oak, per ft. sup. as inch	0	0	8½	0	0	9½	
¾ in. do. do	0	0	7	—			
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0	0	9	0	1	0	
Selected, Figury, per ft. super. as inch	0	1	6	0	2	6	
Dry Walnut, American, per ft. super. as inch	0	0	10	0	1	0	
Teak per load	17	0	0	22	0	0	
American Whitewood Planks, per ft. cube	0	4	0	0	5	0	

Prepared Flooring, etc.—	Per square.					
1 in. by 7 in. yellow, planed and shot	0	13	6	0	17	0
1 in. by 7 in. yellow, planed and matched	0	4	0	0	18	0
1¼ in. by 7 in. yellow, planed and matched	0	16	0	1	0	0
1 in. by 7 in. white, planed and shot	0	12	0	0	14	6
1 in. by 7 in. white, planed and matched	0	12	6	0	15	0
1¼ in. by 7 in. white, planed and matched	0	15	0	0	16	6
¾ in. by 7 in. yellow matched and beaded or V-jointed brds.	0	11	0	0	13	6
1 in. by 7 in. " "	0	14	0	0	18	0
¾ in. by 7 in. white " "	0	10	0	0	11	6
1 in. by 7 in. " "	0	12	9	0	15	0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton.					
Rolled Steel Joists, ordinary sections	£	s.	d.	£	s.	d.
	7	0	0	7	10	0
Compound Girders, ordinary sections	9	0	0	10	0	0
Steel Compound Stanchions	11	0	0	2	0	0
Angles, Tees, and Channels, ordinary sections	9	0	0	10	0	0
Flitch Plates	9	0	0	9	10	0
Cast Iron Columns and Stanchions including ordinary patterns	7	10	0	8	10	0

METALS.

IRON—	Per ton, in London. £	s.	d.	£	s.	d.
Common Bars	8	10	0	9	0	0
Staffordshire Crown Bars, good merchant quality	8	15	0	9	5	0
Staffordshire "Marked Bars"	10	10	0	—		
Mild Steel Bars	8	15	0	9	5	0
Hoop Iron, basis price	9	5	0	9	10	0
" " Galvanised	17	0	0	—		

(*And upwards, according to size and gauge.)

METALS (*continued*).

IRON (*continued*)—	Per ton, in London. £	s.	d.	£	s.	d.
Sheet Iron Black—						
Ordinary sizes to 20 g.	9	15	0			—
" " 24 g.	10	15	0			—
" " 26 g.	12	5	0			—
Sheet Iron, Galvanized, flat, ordinary quality—						
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	15	0	0			—
Ordinary sizes to 22 g. and 24 g.	15	10	0			—
" " 26 g.	16	10	0			—
Sheet Iron, Galvanized, flat, best quality—						
Ordinary sizes to 20 g.	18	0	0			—
" " 22 g. and 24 g.	18	10	0			—
" " 26 g.	20	0	0			—
Galvanised Corrugated Sheets—						
Ordinary sizes, 6 ft. to 8 ft. 20 g.	14	10	0			—
" " 22 g. and 24 g.	4	15	0			—
" " 26 g.	16	5	0			—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	12	0	0			—
Best Soft Steel Sheets, 22 g. & 24 g.	13	0	0			—
" " " 26 g.	15	0	0			—
Cut Nails, 3 in. to 6 in.	10	10	0	11	0	0

(Under 3 in., usual trade extras.)

LEAD, &c.	Per ton, in London. £	s.	d.	£	s.	d.
LEAD—Sheet, English, 3lb. and up.	16	15	0			—
Pipe in coils	17	5	0			—
Soil pipe	19	5	0			—
Compo pipe	20	5	0			—
ZINC—Sheet—						
Vielle Montagne	26	10	0			—
Silesian	26	5	0			—
COPPER—						
Strong sheet per lb.	0	1	0			—
Thin " "	0	1	1			
Copper nails "	0	0	10			—
Copper wire "	0	0	10			—
BRASS—						
Strong Sheet "	0	0	11			—
Thin "	0	1	0			—
TIN—English Ingots "	0	1	5			—
SOLDER—Plumbers "	0	0	7			—
Tinmans "	0	0	9½			—
Blowpipe "	0	1	0			—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1¾d. " "
21 oz. thirds	3d. " "
" fourths	2½d. " "
26 oz. thirds	4d. " "
" fourths	3d. " "
32 oz. thirds	4¾d " "
" fourths	4½d. " "
Fluted Sheet, 15 oz.	3½d. " "
" 21 oz.	4½d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

⅛ Hartley's	2½d. per ft. delivered.
3/16 "	2⅝d. " "
¼ "	2⅞d. " "
Figured, Oxford Rolled and "Oceanic" Glass, white	3½d. " "
" " tinted	5d. " "

OILS, &c.		£	s.	d.
Raw Linseed Oil in pipes	per gallon	0	1	11
" " ,, in barrels	"	0	2	0
" " ,, in drums	"	0	2	3
Boiled ,, ,, in barrels	"	0	2	3
" " ,, in drums	"	0	2	6
Turpentine in Barrels	"	0	2	4
" in drums	"	0	2	6
Genuine Ground English White Lead	per ton	20	10	0
Red Lead, Dry	"	20	0	0
Best Linseed Oil Putty	per cwt.	0	7	0
Stockholm Tar	per barrel	1	12	0

VARNISHES, &c.	Per gallon.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 6
Fine Elastic Carriage	0 12 0
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flating Varnish	0 18 0
White Pale Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 0
Berlin Black	0 16 0
Knotting	0 10 9
French and Brush Polish	0 10 6

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursday*. [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

*** Denotes *accepted*. † Denotes *provisionally accepted*.**

ABERGAVENNY.—For reconstruction of upper floors, new bath-houses, etc., of Monmouthshire Asylum. Mr. E. A. Johnson, F.R.I.B.A., architect, Abergavenny:—

W. J. Bloxham	£16,500	0	
H. Smith	15,728	0	
J. Long & Co., Ltd.	15,490	0	
J. Jenkins, Ltd.	15,125	0	
W. Williams	14,990	0	
J. G. Thomas & Sons	£14,482	0	
Hayward & Wooster	13,969	0	
T. Broad, Ltd., Gt. Malvern*	13,739	0	
A. J. Colborne	13,599	14	

ADDLESTONE (Surrey).—For repairs to buildings of the Princess Mary Village Homes, for the committee. Messrs. Thurgood, Son, & Chidgey, architects, 8, Adelphi-terrace, W.C.:—

Parrott & Isom..	£2,166 0	R. Love	£1,331 0
Grover & Son ..	2,052 0	W. Greenfield ..	1,299 18
Tompsett & Co.	1,470 0	E. Potterton ..	1,290 0
W. H. Gaze & Sons	1,464 0	Drowley & Co...	1,210 0
Caesar Bros.....	1,360 0	Deacon & Son, Addlestone* ..	958 0

BECCLES.—For making up, etc., of Back Denmark-road, for the Corporation. Mr. T. O. Cudbird, Borough Surveyor, Beccles:—

G. Elsey.....	£320 0 0	G. Johnson ..	£220 0 0
W. Church....	315 0 0	E. J. Edwards, Norwich* ..	202 4 5
E. Howes	269 16 9		
H. Hindes	258 18 6		

[Borough Surveyor's estimate, £223 15s.]

CHARTHAM DOWNS.—For proposed new recreation rooms and works in connexion therewith, at the Kent County Lunatic Asylum, Chartham Downs, near Canterbury, for the County Asylums Committee. Mr. W. J. Jennings, architect, 4, St. Margaret's-street, Canterbury:—

H. & S. Myleton..	£2,766 0	Adcock & Son ..	£2,130 0
Johnson & Co. ...	2,724 0	G. H. Denne & Co.	2,120 0
Godden & Son ..	2,462 0	F. & G. Foster ..	1,949 0
T. T. Denne	2,310 0	Sellick & Sons ..	1,944 5
G. Browning	2,245 0	Amos & Foad, Whitstable* ..	1,897 0
Turth & Appleton	2,173 0		
Wallis & Sons, Ltd.....	2,132 0		

CHELL.—For new dining-hall at Workhouse, for Wolstanton and Burslem Guardians. Messrs. Ford & Slater, architects, Overhouse Chambers, Burslem:—

J. Cooke	£1,050 0 0	C. Smith	£825 0 0
J. Gallimore..	898 0 0	Colclough & Breeze, Pitshill* ..	800 0 0
J. Grant	880 0 0	J. Jones	790 13 2
W. Grant & Son	850 0 0		
G. M. Sambrooke....	845 0 0		

CROSBY.—For additions to elementary school, for Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln:—

A. Sykes	£1,970 10	F. Scarborough, Upper Moor-street, Lincoln*..	£1,784
H. J. Thompson.	1,920 0		

DEVONPORT.—For the New Drainage Works to the Devonport Workhouse, for the Devonport Guardians of the Poor. Mr. Chas. Cheverton, architect and surveyor, 64A, Chapel-street, Devonport:—

Beattie	£1,258 14 0	T. Shaddock	£779 9 0
H. J. Allen ..	932 19 1	Jefford & Sons	748 13 4
G. H. Smith & Son	929 15 0	W. Stephens	732 0 0
D. Sale.....	925 0 0	T. Jenkin & Son	725 0 0
Wakeham Bros.....	915 0 0	Steer & Pearce	712 4 0
J. Shaddock	875 0 0	Pearn Bros...	654 0 0
J. Crockerell..	844 4 0	W. C. Shaddock, Plymouth† ..	641 2 3
W. Stevenson	800 0 0		
J. Budge & Co.	786 0 0		

DONCASTER.—For erecting a villa residence at Althorpe, for Mrs. Betsy Oldfield. Mr. G. Sinclair, architect, 2, Church Parade, Crowle. Quantities by architect:—

H. Teanby	£610 0 0
J. Loughton	489 10 2
T. Cook	419 0 0
C. Hill, Luddington, Lincolnshire (*Bricks, Plaster, and Slating*)*	400 16 6
Joiner.	
W. Thompson, Crowle, Doncaster*..	£125 0 0
Plumber.	
J. Oxerforth, Crowle, Doncaster*	£25 16 0

EALING.—For the erection of St. Saviour's Church House, Ealing. Mr. G. H. Fellowes Prynne, architect, 6, Queen Anne's Gate, Westminster, S.W.

Mussellwhite & Sapp	£4,978	Myring & Son	£4,297
Walden & Cox	4,694	Wilkins & Sons	4,278
C. Ansell.....	4,650	Bowman & Sons ..	4,220
Holland & Hannen	4,589	Kingerlee & Son ..	4,179
Goddard & Sons ..	4,582	Crossley & Son	4,173
Jarvis & Sons	4,484	Webster & Cannon	4,168
J. Carmichael	4,397	W. J. Dickens	4,100
Ogilvie & Co.....	4,350		

EASTBOURNE.—For private improvement works in passages at the rear of Annington-road and passages at rear of Dennis-road, etc., for the Highways Committee. Mr. A. Ernest Prescott, Borough Surveyor, Town Hall, Eastbourne:—

	Winter and Dennis-roads.	Annington-road.
M. Hookham....	£132 1 0	£22 10 0
C. P. Dennis & Co.	123 10 0	27 10 0
J. Vine, Eastbourne*	34 0 0	—
	85 0 0	20 10 0
Gibbons Bros...	—	20 10 0
J. Martin.....	—	20 0 0

EDMONTON.—For alteration and regulation of the course of Pymme's Brook, for Mr. C. C. Eley. Mr. S. R. Lowcock, M.Inst.C.E., Engineer, 50, Queen Anne's-gate, Westminster, S.W.:—

E. Greenfield ..	£674 8 0	S. Kavanagh & Co.	£404 7 3
J. Sangwin....	638 16 10	G. Bell & Sons	394 5 6
W. H. Hyde & Co.	572 0 0	R. Dykes	359 17 0
E. T. Bloomfield	507 10 2	Grounds & Newton	280 11 11
Wilson, Border, & Co.	499 1 0	A. T. Catley, 23, Lloyd-square, W.C.*	247 0 0
T. Adams	411 0 0		
T. H. Pedrette	406 4 0		

FRINTON-ON-SEA.—For new branch bank, for Messrs. Barclay & Co. Messrs. Tomkins, Homer, & Ley, architects, Frinton-on-Sea, and 54 and 55, Bishopsgate-street Without, E.C. Quantities by Mr. R. H. Mayhew, St. Benet-chambers, Fenchurch-street, E.C.:—

T. J. Ward.....	£2,596	G. Dobson & Son ..	£2,296
W. Deaves	2,545	E. Catchpole & Sons	2,272
H. Everett & Son ..	2,397	T. W. Wash	2,258
C. J. Parsons	2,380	C. H. Jones.....	2,179
W. Chambers.....	2,348	G. Grimwood & Sons	2,159
H. W. Gladwell	2,333	R. Beaumont, Colchester*	2,096
A. E. Farr	2,300		

[Architect's estimate, £2,185.]

GAINSBOROUGH.—For new block, elementary school, Ropery-road, for Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street-chambers, Lincoln:—

H. Dorrington	£3,700	B. Pumfrey	£3,250
J. G. Cooling	3,674	A. J. Elmes, North-street, Gainsborough*	3,240
Wright & Son	3,558		
J. W. Burrell	3,330		
Scarborough	3,307		

GATESHEAD.—For St. George's Parochial-buildings, Durham-road for the Committee. Mr. R. Wylie, A.R.I.B.A., 36, West-street, Gateshead:—

A. Pringle, Gateshead*	£2,890

GELLIGAER.—For erecting thirty or more cottages at Gelligaer village, for the Cascade Building Club. Mr. W. Harris, architect and surveyor, Bank Chambers, Bargoed:—

	Per house.
Davies & Lloyd	£170 0 0
G. Jones	157 10 0
H. J. Davies	141 5 6
D. Williams.....	139 5 0
A. W. Davies	138 10 0
W. Brown	130 0 0
G. Barnett	125 10 0
T. Matthews	124 10 0
E. P. Davies, Vaughan-street, Dowlais*	124 0 0

KINGSWEAR (Devon).—For repairs to farm-house at Hoodown Farm. Mr. T. O. Veale, surveyor, Castle View, Dartmouth:—

J. Sidery	£250	J. Triggs	£126
J. Short	187	R. Watts, Victoria-road, Dartmouth*..	122
R. Pillar	180		

LITTLE COATES.—For elementary school at Little Coates, Lincoln, for Lindsey County Council Education Committee. Messrs. Scorer & Gamble, Architects, Bank-street-chambers, Lincoln:—

Hewins & Goodhand	£8,335 14 6
Moss & Sons, Ltd.	8,300 0 0
H. Marrows	8,071 0 0
H. J. Thompson	7,902 0 0
Longden & Son	7,771 10 0
Holmes & Richardson	7,736 0 0
Pattinson & Son, Ltd.....	7,748 0 0
Wright & Sons, Park-street, Lincoln*	7,697 0 0

LONDON.—For painting, distempering, general repairs, etc., at Infirmary, Fulham-road, S.W., for St George's Guardians:—

G. A. Rowley..	£1,187 2 6	S. T. Wright ..	£829 0 0
Spencer, Santo & Co., Ltd. ..	1,130 0 0	B. E. Nightingale	822 0 0
A. J. White & Co.	1,120 0 0	S. Squire.....	810 0 0
E. A. Hough ..	915 0 0	W. G. Stone ..	800 0 0
A. G. Chamberlain	910 0 0	A. H. Inns	795 0 0
A. Penton	873 0 0	M. McCarthy, King's-avenue, Clapham Park, S.W.*	715 0 0
R. Woollaston & Co.....	845 0 0		

LONDON.—For works at Wandsworth-road to Easthill, for the London County Council:—

Setting back the railings and forecourt walls of Nos. 489 *to* 501 (*odd numbers*), *Wandsworth-road.*

J. Mowlem & Co., Ltd.	£139 0 0

Setting back the fences and forecourt walls of Nos. 78 *to* 84, 88 *to* 106, *and* 116 *to* 120 (*even numbers*), *Wandsworth-road.*

Crooks & Co.	£374 0 0
E. Triggs.....	266 10 0
A. Howard, Herne-hill, S.E.*	247 18 10

HENDON.—For kerbing and paving Edgware-road, The Hyde, for the Urban District Council. Mr. S. Slater Grimley, Engineer to the Council, Council Offices, Hendon:—

—	The Hyde Improvement.	Edgware-road Paving.	Wise-lane Sewer.	Total.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
J. Latter	1,286 5 11	141 10 0	754 11 6	2,182 7 5
Pedrette & Co.	940 9 8	188 4 2	533 6 0	1,661 19 10
W. Moss & Co.	858 0 0	148 0 0	441 0 0	1,447 0 0
R. C. Brebner & Co	721 11 3	231 5 0	345 17 6	1,298 13 9
D. R. Paterson Ltd.	745 9 2	138 15 0	383 4 0	1,267 8 2
W. Griffiths & Co	744 4 3	116 0 0	387 11 9	1,247 16 0
R. Ballard	726 12 9	126 15 0	392 6 0	1,245 13 9
Hamiltons	760 7 0	104 0 0	369 2 0	1,233 9 0
T. W. Pedrette	728 16 0	169 5 0	328 14 6	1,226 15 6
T. Adams	745 9 0	92 0 0	367 3 6	1,204 12 6
F. G. Brummell	749 6 5	108 0 0	338 19 7	1,196 6 0
G. Powdrill, Luton*	696 16 8	93 10 0	316 1 9	1,106 8 5

HENDON.—For construction of bacteria beds Nos 6, 7, and 8, Sewage Outfall Works, for the Urban District Council. Mr. S. Slater Grimley, Engineer to the Council, Council Offices, Hendon:—

R. Brebner & Co.	£4,880 4 2
Pedrette & Co.....	4,034 17 6
W. Muirhead & Co.....	3,123 4 9
R. Ballard	3,077 1 6
J. Latter	2 992 8 0
F. G. Brummell	2,882 5 9
F. W. Pedrette.....	2,716 19 5
W. Moss & Son.....	2,680 0 0
Wellerman Bros.....	2,633 19 6
Paterson & Co.....	2,560 16 7
T. Adams	2,538 3 3
Hamiltons.....	2,361 0 0
G. Powdrill, 1, Hitchin-road, Luton*	2,287 9 6

HULL.—New bottling stores, for Messrs. Moor & Robson's Breweries Ltd. Messrs. Harbron & Robson, architects, 5A, Spring Bank. Quantities by Mr. John Watson, Bowalley-lane, Hull:—

J. H. Fenwick	£1,438	G. L. Scott.....	£1,320
F. Southern	1,410	T. Goates & Sons ..	1,319
G. Houlton & Son..	1,385	P. T. Kettlewell ..	1,319
G. Jackson & Sons	1,383	M. Harper	1,295
T. Bayes & Son....	1,374	Quibell, Son & Greenwood*	1,276
J. Simpson & Son..	1,349		
J. T. Levitt	1,330		

[All of Hull.]

IVER (Bucks).—For sewerage and sewage disposal works (Contracts Nos. 1 and 2), for Eton Rural District Council. Mr. A. Gladwell, Engineer and Surveyor, 160, High-street, Slough:—

Langley & Johnson, Slough*	£5,813 17 0

[Engineer's estimate comparable with tenders, £5,859. Thirty-four tenders received—lowest, £5,053 19s. 4d.; highest, £9,800 3s. 11d.]

LONDON.—For erection of painting shop, Hammersmith car-shed, for the London County Council:—

C. Wall, Ltd.....	£5,273	A. Roberts & Co., Ltd., Earls-court-road, S.W.*	£4,990
J. & C. Bowyer	5,080		
W. Johnson & Co...	5,005		
Leslie & Co., Ltd...	4,991		

[The estimate of the Architect comparable with the above tenders is £5,140.]

LONDON.—For fitting up as a shop No. 219, Waterloo-road, Webber-row Estate, for London County Council:—

S. Haskins & Bros.....	£117 3 0
F. Sage & Co. (1905), Ltd.....	110 0 0
C. Spreckley & Co., Ltd.....	93 0 0
Clancy & Slater	77 0 0
J. Nicholls	74 0 0
C. Wall, Ltd., Lloyd's-avenue, E.C.*	72 10 0

LONDON.—For proposed alterations and sanitary work in connexion with new bath rooms, etc., at the District Sick Asylum, Devons-road, Bromley, E., for the Managers of the Poplar and Stepney Sick Asylum District. Messrs. J. & W. Clarkson, architects, 136, High-street, Poplar, E.:—

		Alternate Tender.
R. A. Lowe & Co.	£620	£605
Dohnan & Mathews	607	597
W. Reason	589	582
W. S. Sharpin	549	531
Griggs & Son.....	545	530
H. Leek.....	540	516
M. Calnan & Son	538	518
Newell & Lusty	513	485
M. Upson	501	489
E. Dyke.....	498	488
R. Woollaston & Co., Bow, E.*	498	475

LONDON.—For new street works at Castlewood-road, for Hackney Borough Council. Mr. Norman Scorgie, M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Hackney:—

—	If the ordinary Edge Kerb and the Flat Channel are of—				
	Norwegian Granite.	Cornish Granite.	Irish Granite.	Guernsey Granite.	Leicestershire Granite.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
E. T. Bloomfield	1,195 0 0	1,295 0 0	1,295 0 0	1,300 0 0	1,290 0 0
W. Griffiths & Co., Ltd.	1,187 17 7	1,167 10 7	1,177 14 1	1,156 9 11	1,183 19 11
T. Adams	1,186 6 2	1,196 6 2	1,196 6 2	1,236 6 2	1,186 6 2
R. Dykes	1,179 3 5½	1,179 3 5½	—	1,249 3 5½	1,170 3 5½
G. Porter	1,149 10 2	1,159 13 8	1,129 3 2	1,159 0 2	1,159 13 8
A. T. Catley, 23, Lloyd-square, W.C.*	1,135 15 2	1,115 15 2	1,135 15 2	1,115 15 2*	1,165 15 2

MACCLESFIELD.—For painting at the Cemetery Lodges, Mortuary, Chapels, etc., for the Corporation:—
Hill & Dixon, Macclesfield* £59

MICKLEY.—For the erection of a United Methodist Church at Mickley Riding, for the Trustees. Messrs. Badenoch & Bruce, architects, Emerson Chambers, Blackett-street, Newcastle-on-Tyne:—
Middlemiss Bros., Newcastle-on-Tyne* £1,031 5 0
[This includes heating apparatus.]

MONKSEATON.—For making up and completing carriageways and footways at "The Fold," for Whitley and Monkse ton Urban District Council. Mr. A. J. Rousell, A.M.Inst.C.E., Surveyor, Council Offices, Whitley Bay:—
M. D. Young, Newcastle £380

NEW MILLS.—For erecting a Carnegie library in Hall-street, for the Urban District Council, and Free Library Committee. Mr. R. B. Preston, architect, 51, South King-street, Manchester:—
S. & D. Boyle, New Mills* £2,050 0 0

PINNER.—For erecting a pair of semi-detached houses on the West End Park Estate, Pinner. Mr. J. E. Henderson, architect, West End-avenue, Pinner, Middlesex:—

Reynolds	£1,310	C. Perren, Wealdstone*	£1,000
Ellement	1,290		
Milsom & Co.	1,190		

PINNER.—For erecting a detached house in West End-avenue:—
Milsom & Co., Hendon* £685

PINNER.—For erecting four houses in West End-avenue:—
Milsom & Co.* £2,380

SKEGNESS (Lincolnshire).—For additions to an elementary school, for Lindsey County Council Education Committee. Messrs. Scorer & Gamble, architects, Bank-street Chambers, Lincoln:—

T. H. Cade	£595 0 0	A. J. Elmes	£430 0 0
Hockley & Co.	497 3 10	Scarborough, Upper Moor-street, Lincoln*	384 18 4
H. J. Thompson	485 0 0		
G. W. Wainerm	440 0 0		
J. Kime	438 0 0		
J. T. Turner & Sons	436 0 0		

SOUTH KILLINGHOLME.—For erecting a new school, with teachers' house, for Lindsey County Council Education Committee. Messrs. Scorer & Gamble, Architects, Bank-street-chambers, Lincoln:—

J. Stamp	£2,052 5	Pettifer & Stainton	£1,770 0
G. R. Usher	2,050 0	Holmes & Richardson	1,765 0
H. J. Thompson	1,851 0	Scarborough, Upper Moor-street, Lincoln*	1,585 0
Hollingsworth Bros.	1,831 11		
Pattinson & Son	1,800 0		

SOUTH MOOR.—For private street works, for Stanley Urban District Council. Mr. J. P. Routledge, Surveyor, Council Offices, Stanley:—

T. C. Usher & Co.	£235 9 3	J. McLaren	£118 5 0
J.W.Henderson	168 18 9	Johnson & Strong, Stanley, S.O.*	122 6 9
G. A. Reevell	167 7 0		

STAINES.—For the construction of roads and sewers on the Riverfield Estate, Laleham-road, Staines. Mr. Clarke Ashworth, architect, 3A, Golden-court, Richmond, Surrey:—

T. Free & Sons	£1,079	A. Streeter & Co.	£850
Harringdon & Co.	1,060	S. Kavanagh & Co.	847
Wright & Porter	945	S. Lane & Co., Wimbledon*	741
J. C. Trueman, Ltd.	898		

STEVENAGE.—For new County Council school, Stevenage:—

W. H. Hinkins & Son, Ltd.	£5,565 3 5	H. Flint	£3,480 0 0
C. H. Marriott	4,118 16 0	Pattinson & Son, Ltd.	3,470 0 0
Hockley & Co.	3,940 3 8	F. J. Bailey & Co., Ltd.	3,396 0 0
G. Jaggard	3,770 8 6	A. N. Coles	3,378 16 0
J. L. Glasscock & Son	3,668 0 0	J. Willmott & Son	3,294 0 0
T. Raban & Son	3,580 9 10	G. Henson & Son, Wellingborough*	3,222 13 6
F. & G. Foster	3,579 0 0	Clark & Son	3,163 0 0
Shrouder & Matthews	3,555 0 0	T. Higgs‡	3,112 7 2
Vail & Shore	3,525 0 0		
Hacksley Bros.	3,508 0 0		

‡ Withdrawn.

WEST AUCKLAND.—For erecting a church hall. Mr. F. H. Livesay, architect and surveyor, Newgate-street, Bishop Auckland:—

W. Hudson	£1 134 4 11	T. Manners	£963 3 0
J. Moore	1,075 11 0	G. K. Bell	948 13 0
J. W. White	1,045 0 0	W. Hope & Sons, Coundon*	922 16 2
T. Hilton	1,040 17 0		
Walton Bros.	973 0 0		
A. Metcalfe	963 15 5		

WEST BILNEY.—For alterations and additions to the "Beeches," for S. J. Bell & Co. Messrs. W. Jarvis & Son, architects, Paradise-parade, King's Lynn. Quantities by architects:—

Jeffries	£499 0	Ashby, Ltd.	£441 19
Medwell	460 0	Tash & Langley	439 10
Barnes & Co.	451 0	F. & S. Dickerson, King's Lynn*	406 19
Dye & Allen	449 0		
Ives & Sons	448 0		

WEST HARTLEPOOL.—For erecting the Empire Theatre, for Mr. Richard Thorton. Messrs. W. & T. R. Milburn, F.F.R.I.B.A., 20, Fawcett-street, Sunderland:—

Garvie & Sons	£15,074 0 0
Watt Bros.	14,923 0 0
E. M. Tweddle	14,718 0 0
Clerey & Charlton	14,626 0 0
D. & J. Ranken	14,444 0 0
W. W. Brazell	14,204 13 5
J. W. White	14,100 0 0
A. Pringle	14,081 0 0
Davidson & Miller	13,977 12 7
Parkinson & Sons	13,916 18 6½
S. Easten, Ltd.	13,751 1 3
J. Huntley	13,710 0 0
H. C. Howe	13,431 8 4
W. Pearson	13,161 0 0
J. Proud	13,128 0 0
J. Howe & Co., West Hartlepool*	12,746 0 0

WEST LOOE.—For remodelling of Jacobstown-road. Mr. Cyril Martin, surveyor, Port View, East Looe:—

C. White	£149 10 0	J. Alderman, West Looe*	£113 0 0
S. Dawe	125 5 0		

WEST PENNARD.—For water supply works, for Wells Rural District Council. Mr. W. Phelps, C.E., Shepton Mallet:—

A. J. Saise	£3,347 0 0
T. J. Davies	2,986 9 2
A. G. Benton	2,753 17 0
F. W. Sibley & Co.	2,675 0 0
T. Munford & Son	2,565 0 0
T. B. Cooper & Co.	2,522 16 1
Smith & Marchant	2,436 16 0
W. Sparrow, Ltd.	2,432 11 0
Wright & Son	2,398 14 5
J. Riley	2,388 1 8
Guppy & Chant	2,384 0 0
G. Pollard & Co., Ltd., Taunton*	2,348 13 4

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